THE ELEMENTARY SCHOOL JOURNAL

THE UNIVERSITY OF CHICAGO
CHICAGO, ILLINOIS

Ed.
370.5
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v.38
1937-38
7437-6

THE

ELEMENTARY SCHOOL JOURNAL

Edited by
NEWTON EDWARDS

with the co-operation of
THE DEPARTMENT OF EDUCATION OF
THE UNIVERSITY OF CHICAGO

VOLUME XXXVIII

SEPTEMBER, 1937—JUNE, 1938

THE UNIVERSITY OF CHICAGO
CHICAGO, ILLINOIS

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18559

Published

September, October, November, December, 1937
January, February, March, April, May, June, 1938

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THE ELEMENTARY SCHOOL JOURNAL

VOLUME XXXVIII SEPTEMBER 1937 NUMBER 1

Educational News and Editorial Comment

A STUDY OF FEDERAL RELATIONS TO EDUCATION IN THE STATES

Last autumn President Roosevelt appointed, under the chairmanship of Floyd W. Reeves, professor of education, University of Chicago, a committee to make an extensive study of the relation of the federal government to vocational education. Some months ago the personnel of the committee was enlarged, and the scope of its inquiry was extended to cover the whole subject of federal relations to state and local conduct of education. The membership of the committee represents a diversity of backgrounds and interests—professional education, the federal government, business, labor, public administration, home economics, and agricultural economics.

The following statement concerning the work of the Advisory Committee on Education is quoted from an address given by Dr. Reeves before the National Education Association at its convention in June.

Since the committee's assignment calls for a completed report by next December, the committee has been forced to move rapidly. It is expected that the major part of the staff work for the committee will be completed during the next three months.

Plans have been developed for brief but comprehensive studies of the financing of education, of educational administration as a major phase of state govern-

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ment, of the quality of existing educational programs in the states, of the new and emergency federal education programs, of education in special federal jurisdictions, and of the social, economic, and governmental factors basic to a consideration of federal relations to education. . . . .

In the nature of the case it will be impossible for the committee to carry on elaborate researches. The time is too short. Our objective is to organize effectively the results of the professional thinking and the research studies that have already been completed. In other words, we intend to skim the cream off of the work that has already been done.

One exception to this procedure should perhaps be mentioned. The organization of educational administration as a phase of state government has been studied relatively so little and is of such major importance to the determination of whether and how federal aid should be provided for public education that we are concentrating a great deal of effort on studies of this subject. For several weeks we have been engaged in making detailed plans for field studies of state educational administration. We have assembled a staff to make those field studies under Dr. Walter D. Cocking's direction that includes men who have recently served in, or who have been borrowed from, the state departments of education in Connecticut, Virginia, Michigan, Tennessee, Missouri, and Texas. These men will be out on circuits of visits to state departments from now until late August. We hope to obtain needed information through direct inquiries in each of the forty-eight states. . . . .

Definite arrangements are being made for the co-operation of a number of important federal agencies. The National Resources Committee will co-operate in studies of the social and economic aspects of federal relations to education. We are consulting closely with the Advisory Committee of the National Youth Administration in our studies of the program of that agency. The Office of Education in the Department of the Interior is assigning certain of its personnel to make studies needed by our committee and will make available its collection of research materials bearing upon federal relations to education, the most extensive collection of such materials in the United States. We also expect to consult frequently with the Commissioner of Education, Dr. John W. Studebaker.

Plans are also under way for co-operation with the numerous nongovernmental organizations and agencies that are in a position to make an important contribution to our studies. These plans are already rather definite in a number of cases.

The American Youth Commission is now engaged in an extensive survey of the educational work of the Civilian Conservation Corps. An agreement has been reached by which the Youth Commission will expedite certain phases of this survey in order that the findings may be available in time to be of service to our committee.

The Council of Chief State School Officers, which as you know includes the heads of departments of education in each of the forty-eight states, has extended

its full co-operation and has been of major assistance in planning the field studies for the committee.

The Educational Policies Commission of the National Education Association was already making plans for a survey of educational administration throughout the United States when it became apparent that the Advisory Committee on Education would have a major interest in this subject. Representatives of the two groups met in a conference in Washington on June 12, and a working relationship was agreed upon that should enhance greatly the value of the studies to be made by each group.

Here and There among the Schools

The *Elementary School Journal* has adopted the policy of reporting, from time to time, significant innovating educational practices. This policy will be continued during the current year. Superintendents, principals, and teachers are invited to submit to us accounts of new approaches to the solution of their problems with the view of making the information available to other workers in the field. The information desired may concern almost any aspect of the school—the curriculum, methods, provisions for individual differences, administration, supervision, housing, equipment, and community relations. It is to be assumed, of course, that the *Journal* does not necessarily approve of all the practices which we report.

The cadet-teacher plan in Wilmington, Delaware.—Teachers' colleges and other institutions concerned with the education of teachers in this country have never been able to provide any large number of their students with satisfactory opportunity to do practice teaching. It is true that most teacher-education institutions have their own training schools or make some arrangement whereby their students may do practice teaching in the public schools of the community. In this way young, prospective teachers are able to get some experience in observing others teach and in teaching under expert supervision, but it is doubtful whether many of them acquire anything like an adequate mastery of the teaching technique necessary for the direction of the learning processes of the children committed to their care. It has long been our conviction that most public-school authorities have refused to assume their proper responsibility in the guidance and direction of young teachers. Schools of education, like schools of medicine, cannot, in the nature of the case, turn out finished practitioners; the young teacher as well as the young

doctor needs practical experience under competent supervision. Every school system has the responsibility not only of employing a certain number of beginning teachers but of providing for their sympathetic guidance. The practice of some of the larger cities of refusing to employ teachers who have not had at least a year's experience is unfair to smaller communities, and it does not contribute to the well-being of the profession.

S. M. Stouffer, superintendent of schools of Wilmington, Delaware, has adopted a plan of training beginning teachers which should be of interest to superintendents and teachers throughout the country. Mr. Stouffer has supplied us with the following description of his plan.

During the past three or four years we have been attempting to meet this problem in Wilmington by organizing what is known as the "cadet-teacher plan." Briefly stated, this system provides a period of practical training for the prospective teacher between the time of graduation and appointment to a regular teaching position. It is a sort of internship, lasting at least one year, similar to that required in the medical profession, during which time the prospective teacher becomes an assistant to what we call a "master teacher."

The cadet teacher is paid a nominal salary and is a full-time employee of the board of education. Throughout the period of her cadetship she observes the master teacher and assists her in her work. Ample opportunity is offered her to familiarize herself with the methods of instruction, the routine of school management, the educational policy of the school system, the courses of study, the textbooks and other materials of instruction, the filling-out of records and reports, and to perform any other duties or engage in any other activities that will better fit her for a regular appointment. As time goes on, she is permitted to do some teaching under the careful guidance and direction of the master teacher. An attempt is made to build up the most friendly and sympathetic relations possible between the cadet and the master teacher. The cadet teacher is also the chief object of concern on the part of the principal and the supervisor.

In addition to this direct help, there should be arranged a series of group conferences to be conducted by someone in the school system who understands and sympathizes with the problems of the beginning teacher. Problems to be discussed in these conferences should be suggested largely by the cadet teachers themselves—problems which grow out of their classroom experiences—although the sponsor should not hesitate to suggest other problems for consideration in case it seems wise and necessary to do so. Specialists from the various departments of the school system or from outside the system should be called in to assist in the discussions. When necessary, professional reading in relation to the problems under consideration should constitute a part of the training program.

Thus, through observation of the master teacher, through participation in the solution of actual classroom problems, through periodic conferences and check-ups, and through actual teaching experience under the sympathetic and intelligent guidance of the master teacher, the cadet teacher will be likely to develop proper habits of classroom procedure and acquire a feeling of confidence and assurance that will ultimately enable her to stand on her own feet and qualify for a regular appointment. If after a fair trial she fails to demonstrate that she possesses the qualities necessary for a successful teacher, she should be allowed to advance no further or should be dropped from the service.

One important feature of the Wilmington plan is that much of the substitute teaching is done by cadet teachers. This feature of the plan results in more efficient teaching and enables the Board of Education to finance the plan at no additional cost.

According to the Wilmington plan, a cadet teacher receives 50 per cent of the initial minimum salary paid to regular teachers. If she substitutes approximately 50 per cent of the time, this is equivalent to paying her the regular substitute rate only for the time during which she is actually substituting. In actual practice, of course, no distinction is made in her salary between the time she is substituting and the time she is observing and assisting the master teacher. Payments are uniform each month regardless of the amount of substituting up to thirty days. If she remains for more than thirty days in the same position, she is paid the full rate for a teacher of her training and experience. Assuming that the cadet teacher substitutes one half her time and observes the other half, it is obvious that the cadet plan costs no more than the traditional substitute system.

Superintendent Stouffer makes the following comment in general evaluation of the plan.

Finally, we look upon the cadet plan, as it has been developed in Wilmington during the past three years, merely as one feature of our teacher-training program. It does not aim to provide for a program of teacher training after the teacher has been appointed to a regular position. Its main purposes are to make substitute teaching more effective and to bridge the gap between the classroom and the teacher-training institution. All our people are agreed that it has proved effective and that, if some such plan is not employed, this gap will be bridged only with great difficulty on the part of the teacher and with serious loss to the child.

How to avoid overlapping experiences at different age levels.—Teachers who follow the informal type of curriculum program are frequently faced with the problem of how to avoid duplication of experience in different units of work. No doubt most teachers follow some method of recording the units that they have developed with their classes,

and there is little danger of duplication so long as pupils remain with the same teacher. Since units of work are not strictly graded, teachers who are faced with new pupils may, however, launch an activity which many of their pupils have already experienced. It is entirely possible that a child may go through the elementary-school period with a narrow childhood experience because of repetition and a lack of diversity of enterprises. Obviously teachers who employ activity units need to develop a system of record-keeping which will enable them to know as accurately as possible the experiences that their pupils have already had.

Elga M. Shearer, supervisor of elementary education (Grades IV–VI), in Long Beach, California, has supplied us with an account of a system of record-keeping which is being tried out in that city. There are two essential elements in the plan. The first step is to compile a list of the major experiences appropriate for elementary-school children. Each of these items receives a number which serves as a key to the record kept on each pupil's record card. Each pupil is provided with a record card on which is printed a series of simple numerals. At the close of a unit of work these individual record cards are placed in the hands of the pupils, who, under the direction of the teacher, check off those numerals representing the major activities embodied in the unit just completed. When a teacher is faced with a new group of pupils, the individual record cards are again placed in the hands of the pupils, and the teacher, by reading off the key numbers, can ascertain the activities in which the pupils have already engaged.

The case-conference method in character education.—Robert W. Peabody, principal of the Laurel Hill Avenue Platoon School, Providence, Rhode Island, has introduced a program of character education which is centered in the case-conference method. The program is based on the belief that boys and girls can be led to acquire correct ways of social behavior by giving them an opportunity to think through problems "in terms of specific instances of human experience." A group of seventy-five cases, or problem situations, has been assembled, each case or problem representing a practical, everyday situation. A questionnaire was filled out by fifteen hundred pupils in

Grades IV, V, and VI in order that the grade placement of the problems and the extent to which they represent real stumbling blocks of childhood might be determined. The problems are presented to a number of children, and a group solution is sought.

Activities for pre-reading groups.—It is coming to be rather commonly recognized that many children finish a year in the kindergarten without having attained the maturity required to do the kind of work usually scheduled in Grade I. Not so many years ago it was common practice to have these children undertake the work of Grade I and to fail the pupils who were unable to make satisfactory progress. Today, administrators and teachers are trying to work out a flexible program which will meet the needs of these children and which will avoid the frustration incident to failure and repetition.

E. E. Chiles, principal of the Harrison School, St. Louis, Missouri, has worked out a plan whereby pupils unable to do the regular work of Grade I are cared for in "pre-reading units." The program carried on in these units is in the nature of advanced kindergarten or preprimary work; it stresses the following attainments on the part of the pupils: a better understanding of the world about them; reasonable facility in the use of ideas in conversation and in simple reasoning; a command of English sufficient to speak with ease and freedom; a relatively wide speaking vocabulary; accurate enunciation and pronunciation; desire to read; ability to keep in mind a sequence of events; power of visual discrimination; and the acquisition of a vocabulary which will be most helpful when the children are ready to read books. The plan also calls for a clearly thought out analysis of the specific activities which will contribute to the attainment of the desired ends.

Improving reading through a reorganization of the instructional program.—From Edmund M. Forsythe, principal of the Lincoln School, Port Chester, New York, we have received a report of a plan of grouping pupils which has as its purpose the improvement of reading instruction. Through the administration of reading tests and teachers' estimates, it was discovered that pupils in Grade III B to Grade V A, inclusive, fell roughly into six ability groups. Pupils in each of these groups were assigned to teachers on the basis of their interests

and aptitudes in the teaching of reading. The procedure followed thereafter is described by Mr. Forsythe as follows:

> The reading groups met twice a day for a half-hour reading period, and all were taught at the same time. By this method of grouping, each child went to the particular room where the skills and the reading experiences that he needed were being emphasized. The teacher adapted her teaching to the children's level of reading ability and to their particular reading needs. Under the old plan these children had received only a half-hour of reading instruction a day. Under the new plan they enjoyed a full hour of intensive instruction. Again, under the old plan each teacher spent a half-hour each with the three different groups in her grade, thereby giving an hour and a half to reading in her room each day. By devoting one hour to reading in her room under the new plan we saved a half-hour daily while at the same time each child received double the instruction that he received before.

The pupils were classified into six groups as follows: The first was composed of the best readers from Grades III B, III A, and IV B. Children of average reading ability from the same grades composed a second group. A third group was made up of twenty-three children from the same grades who had not learned to read. Pupils of above-average reading ability from Grades IV A, V B, and V A composed the fourth group. A fifth group of low-average ability was made up of children from the same grades. The sixth group was composed of pupils of average ability drawn from Grades IV A, V B, and V A. An expert in reading instruction, Dr. Anna Cordts, who had general supervision of the program, worked out with each teacher the particular program of instruction for her group. Once a week Dr. Cordts worked with the teachers in the classroom. She demonstrated procedures with the children and, upon a teacher's invitation, observed her teaching and made suggestions for further improvement. At the close of the day Dr. Cordts met the teachers in a class, discussed their problems, their efforts and successes, and exchanged ideas with them.

Mr. Forsythe has been so impressed with the results of the plan that he is extending it in the autumn of 1937 to all the grades from I A to VII B. In evaluating the plan, he says in part:

> The most important job of an administrator is to improve the instruction in his school. This we are trying to do without any added expense to the school, without additional equipment, without any change in the teaching personnel, or any addition to the teaching staff. We are doing it through our practical set-

up for in-service teacher training directed by Dr. Cordts within the school itself and through our plan of organization, which provides longer periods of more specialized and intensive instruction in reading (thus enabling the teacher to become skilled in the various techniques and experiences in reading, one at a time, rather than overwhelming her by all the problems, intricacies, and frustrations that are sure to beset her when she tries, at once, to improve all the skills, abilities, attitudes, learnings, and experiences that are bound up in reading) and which makes it possible for each teacher to concentrate for an entire semester on one particular type of reading instruction at one general level of pupil ability.

. . . .

I would advise every principal who wants to improve the reading instruction in his school to organize the groups in such a way that the teacher will be able to concentrate on one type of reading skill and experience until she is qualified to teach it. Reading is too complicated an experience for any but the expert to handle all its varied phases equally well.

Correcting an Error

We are in receipt of the following communication from Professor John A. Hockett, of the University of California.

I regret very much to send you word that in spite of a great deal of care one error appeared in the article by Mr. Neeley and myself entitled "The Vocabularies of Twenty-eight First Readers," published in the *Elementary School Journal*, January, 1937. On page 348, in Table I, Reader 7, *Children's Own*, should have been given a total number of words of 9,335 instead of 5,451, which appears in the first column. This change in amount of material would make a significant change in the average repetition given in the third column. This should have been 14.3 instead of 8.3. The statement in the last paragraph on page 347 that the range in average repetition is from 8.3 in *The Children's Own Readers* to 32.4 in *The Children's Bookshelf* is also erroneous. I hope, in justice to Ginn and Company, that you will make a correction in the *Journal*.

Materials and Services for Social Education

The National Forum, a nonpartisan movement for social education, with headquarters at 820 East Fifty-sixth Street, Chicago, Illinois, has recently issued a multigraphed volume entitled "Social Problems Visualized." The general purpose of the publication is indicated by the following quotation from the Introduction.

These charts present in simple and graphic form the more important facts, viewpoints, and problems of our social life. With the aid of picture and color they give the findings of scholars and of reliable institutions of research.

Following the usual policy of public forums the pictorial and discussion materials present, in some instances, partisan or contrasting points of view. These

are, of course, not to be interpreted as being the points of view of the editors themselves. The National Forum does not itself sponsor any particular social philosophy or partisan position. Its purpose is primarily to bring important facts and opinions to the attention of the people, and to clarify thinking with regard to the more significant social issues. It is earnestly hoped that all who use these materials will challenge and test every conclusion, and decide for themselves as to its validity.

Space is devoted to the consideration of a great many social, economic, and political problems of current interest. Statistical data are presented graphically and pictorially. At the end of the treatment of each problem, questions are suggested for discussion and a rather extended bibliography is introduced.

The Reorganization of Local School Administration in Pennsylvania

It is patent that the consequences of technological change have rendered hopelessly inadequate the mechanism of local school administration in many American states. Vested interests, the force of tradition, indifference, and inertia make reorganization along approved lines difficult, but each year records significant advances toward the establishment of more effective types of administrative control. At its last session the legislature of Pennsylvania enacted a statute which should materially improve the quality of local school administration in that state. The following analysis of the act is quoted from a recent issue of *Public Education*, a monthly bulletin published by the State Department of Public Instruction.

With the signature of Governor George H. Earle, the Ruth-Brownfield Education Bill providing for county boards and merging of small school districts becomes a law. The main purpose of this education measure . . . . is to provide procedures whereby small local districts, with the advice and assistance of county boards of school directors, shall be able to offer the pupils of their schools an educational program equivalent to that of larger districts. The measure marks a gradual and consistent development that will lead to numerous improvements of educational opportunities in rural areas.

The crux of the new law centers around the present county executive committee which is chosen annually by the school directors in districts under the supervision of county superintendents. According to the provisions of the law, this county executive committee, by having additional appropriate powers conferred on it, will become a county board of school directors. The county board of school directors, under the provisions of the law, will be charged with the pow-

er and duty to inspect budgets, approve transportation routes and contracts, recommend school sites and buildings, establish a uniform system of accounting under the county superintendent, supervise the enforcement of the attendance law, and make such studies and reports as may be suggested by the State Council of Education.

While the law provides for merging in 1938 of the thirty-four school districts in the Commonwealth which employ no teachers at present, yet the law is such as to achieve this purpose without disturbing the tenure of the present members of school boards in these districts. The law also provides a plan for additional merging in 1941 of districts in which the number of teachers is ten or less, and where the electors have approved the merger by public election. This is likewise accomplished without the necessity of removing from office any school director in service.

Another major provision of the Ruth-Brownfield Law relates to the office of county superintendent, who becomes the executive officer of the county board of school directors and ex officio member of all committees of the board. In this capacity, the county superintendent attends all meetings of the board and participates in all the discussions and debates but is not privileged to vote. He also signs the annual budget and furnishes such reports as may be required by the county board of school directors, or the superintendent of public instruction.

Many features of the new law promise widespread advantages to Pennsylvania's educational program. It will save children from educational disadvantages suffered at the hands of a bankrupt, or an indifferent school district. It tends to decentralize many powers, now centered in the Department of Public Instruction, to county officials, who are closer to the local communities and more likely to understand actual local needs and conditions. The county board of school directors, as provided in the law, serves as a relay agent through which many direct services are rendered to the local districts.

The movement towards consolidation, the popularity of which is evident from nearly nine hundred voluntary mergers that have taken place in Pennsylvania during the past decade or more, will be stimulated and encouraged by the provisions of this law. It also brings Pennsylvania more nearly in line with the nation-wide movement to improve educational service through the development of larger attendance areas. Many states have already gone far beyond the proposals of this law.

The New State Board of Education in Georgia

A bill recently passed by the state legislature of Georgia provides for the abolition of the old state board of education and for the establishment of a new board. Under the terms of the act the new board will consist of eleven members appointed by the governor with the advice and consent of the senate. The state superintendent of schools is made the executive secretary of the board. In conformity

with recent trends in state school administration, the statute confers rather broad powers on the board. The following paragraphs quoted from the bill indicate something of the extent of the board's powers.

The State Board of Education shall provide rules and regulations for the supervision of all public schools of this state; they shall provide a course of study for all common and high schools receiving state aid, and may in their discretion approve additional courses of study set up by the local units of administration; provide for curriculum revisions and for the classification and certification of teachers. They shall make such rules and regulations as may be necessary for the operation of the common schools and for the administration of the common school fund. They shall prepare and submit to the governor and General Assembly of the State of Georgia an estimate of the funds necessary for the operation of the state public school system. They shall have general supervision of the State Department of Education, and shall employ and dismiss, upon the recommendation of the state superintendent of schools, such clerical employees, supervisors, administrators, and other employees, as may be necessary for the efficient operation of the common school system. They shall set aside the necessary funds for the maintenance of the office of the State Department of Education and the state superintendent of schools, the amount and sufficiency of said funds to be in the discretion of the State Board of Education, said funds to be disbursed by the state superintendent of schools in the payment of salaries and travel expense of employees; for printing, communication, equipment, repairs, and other expenses incidental to the operation of the State Department of Education. . . . .

The State Board of Education shall have appellate jurisdiction in all school matters which may be appealed from any county or city board of education, and its decisions in all such matters shall be final and conclusive. Appeals to the board must be made in writing through the county superintendent of schools, or the secretary of the Official Board of Independent Systems, and must distinctly set forth the questions of law, as well as the facts in the case. The board shall provide by regulation for notice to the opposite party and for hearing on the appeal.

The State Board of Education shall prescribe, by regulation, standard requirements for universities, colleges, normal or professional schools, conferring degrees or issuing diplomas in this state, and no charter granting the right to confer such degrees or diplomas shall be granted or issued until the applicants therefor have obtained from the State Board of Education a certificate showing that such requirements of the board have been met.

Implications for Curriculum Development of the Range in Individual Differences

Ethel L. Cornell, research assistant of the State Department of Education of New York, has recently completed an extensive study

of the achievement and intelligence of some five thousand children from widely differing communities throughout the state. Some of the implications of the study for curriculum development and for the grouping of pupils are summarized briefly in the following statement quoted from the "Report of Proceedings of the Third Annual Conference of Supervisors and Directors of Instruction in Elementary Schools." The conference was held in Albany, New York, under the auspices of the State Education Department.

A study of the range of variability of children (Ethel L. Cornell, *The Variability of Children of Different Ages and Its Relation to School Classification and Grouping*. Educational Research Studies, 1937, No. 1. University of the State of New York Bulletin No. 1101. Albany, New York: University of the State of New York, 1936) emphasized certain facts about the range of individual differences in achievement in standardized educational tests of children of the same age, which raise several far-reaching questions concerning present school practices. These facts, very briefly, are as follows:

1. The extent of "normal" variation (excluding the highest and lowest 2 per cent of each age group, for whom it may be assumed that specialized provisions for exceptional children are needed) is wider than can be provided for by the present grade organization. At the age of ten years, the "normal" range in educational age is more than five school years and at fourteen years is about seven and a half school years. In practice, the grade placement of ten-year-old children placed them within one-half year of the grade level shown by the test in only 53.7 per cent of the cases.

2. The factors conditioning achievement must be very complex. Achievement does not depend alone on level of mental ability: some ten-year-olds with a mental age of nine had as high achievement as some with a mental age of thirteen. Nor does it depend entirely on grade placement: the range of achievement on tests was about the same for ten-year-olds in the fourth grade, in the fifth grade, or in the sixth grade. Some ten-year-olds in the fourth grade had achievement above seventh grade, and some in the sixth grade had achievement below fifth. Nor does it depend entirely on a combination of ability and grade placement. Children of the same chronological age, the same mental age, and the same grade differ by as much as four or five school years in their tested achievement level.

3. There is some evidence that achievement is not as good at either extreme of the curve as ability warrants. The best and poorest 10 per cent in mental age appear to reach a higher level than the best and poorest 10 per cent in achievement.

4. The range of achievement in specific tests is greater than the range in composite achievement. In several tests of the Stanford Achievement battery

there are ten-year-olds who fail completely, and ten-year-olds who excel the norm for the tenth grade.

5. Certain differences in levels reached in different school subjects suggest that some differences may be due to instruction. The poorest 10 per cent of ten-year-olds in arithmetic computation are about one semester higher than the poorest 10 per cent in reading, but the best 10 per cent in reading are about three semesters higher than the best in arithmetic.

6. There is some evidence that the gains which may be expected from year to year differ at different parts of the range. The progress rate of the lowest quarter becomes very much less than the average at ages above ten while the best 10 per cent tend to gain at a somewhat accelerating rate.

These facts have many implications, among which some of the more important ones seem to be:

1. That we need to think through a different fundamental organization than that of grades for purposes of classifying or grouping children.

2. That our objectives need to be expressed in other terms than objectives for a so-called "grade."

3. That there is considerable question as to what extent the content of learning can or should be the same for pupils of such diverse attainments.

4. That we need more information about the extent of the range of pupils in fields of social learning and emotional maturity before we can determine whether the needs of pupils in these respects vary as much as they do in intellectual attainment.

Who's Who in This Issue

Helen M. Robinson, psychologist in the Orthogenic School, University of Chicago. A. J. Mitchell, superintendent of schools, Nogales, Arizona. Bertha M. Parker, teacher of science in the University Elementary School, University of Chicago. L. C. Day, superintendent of schools, South Portland, Maine. Wendell Johnson, assistant director of the Speech Clinic, University of Iowa. Enod House, graduate student at the University of Iowa. Leo J. Brueckner, professor of elementary education at the University of Minnesota.

THE STUDY OF DISABILITIES IN READING

HELEN M. ROBINSON
Orthogenic School, University of Chicago

This article describes the methods of investigating reading difficulties used in the Orthogenic School of the University of Chicago. This school, which is administered by the Department of Education with the co-operation of the University Clinics, serves as a laboratory for the study of retardation or deficiency in learning or of maladjustment in behavior or personality. The purpose of this study is the analysis of the causes or conditions of these defects and the discovery or the evaluation of methods of treatment.

Among the children who are being studied and treated, a number manifest serious deficiency in the ability to read. This difficulty is commonly associated with disturbances of personality or behavior, since inability to read causes failure in school and results in conflicts with parents and teachers and in the development of anxieties or fears. The child is usually referred for study because of the disturbances of conduct or personality, but the difficulty in reading is, in many cases, the underlying cause and the point of attack. The following two cases illustrate the connection between behavior and difficulty in reading and the general improvement which results from clearing up the trouble with reading.

A boy now thirteen years of age was referred to the Orthogenic School at the age of ten. He had been unable to learn to read more than ten words. He was negativistic and had frequent temper tantrums. He tore up books when they were presented to him and told the teacher that many other persons had tried to teach him to read but that all had failed. For several months reading was approached indirectly, and he learned to recognize a limited vocabulary by sight before he was again presented with a book. Many stories which he composed were typewritten and bound in small booklets. The teacher spent a great deal of time with him in activities outside the

schoolroom. His interests were associated with reading, and his co-operation was elicited. As ability to read improved, the temper tantrums decreased and co-operation increased. Although the boy is not able to read as well as the average boy of his age, he has learned to accept his problem and is considered to be well adjusted.

The school report of a fourteen-year-old girl who was retarded in reading indicated that, instead of doing the assigned tasks, she would sit and daydream or complain that she could not do her work even though she had not attempted it. The parent said that this girl often refused to get up in the morning and dressed so slowly that she was always late for school. She made every effort to avoid the school, where undue pressure was exerted upon her to do work which was too difficult, and she frequently was truant. When the mother discovered the truancy, the child would have a series of temper tantrums and the mother was unable to manage her. When the girl came to the Orthogenic School, the remedial work was begun at her level of achievement. Frequent encouragement and reassurance were necessary, but the behavior problem was never so difficult as long as she was not urged to do work that she did not understand.

DISCOVERY AND DIAGNOSIS OF READING DEFICIENCY

Testing reading.—When the child is referred to the Orthogenic School, the fact that he is a poor reader may or may not be mentioned. If it is, a series of diagnostic tests is immediately applied to discover the precise nature of the difficulty. If it is not, the existence of the difficulty will appear from the results of the routine tests which are given to all children upon entrance. When a reading difficulty is discovered by these tests, detailed diagnosis is undertaken.

The child who has special difficulty in reading exhibits irregularity in his performance in the various school subjects. This irregularity is due to the fact that some subjects depend more largely on reading than do others. A general achievement test, which includes tests in all the major subjects, is therefore given to measure the child's general educational performance and to compare his performance in the various school subjects.

The child whose chief difficulty is inability to read usually receives scores in arithmetic computation which are higher than his scores in

reading and spelling. There is frequently a discrepancy of two to four grades in the levels of achievement in arithmetic and reading. Since reading ability is necessary for good scores in all the school subjects except arithmetic, the scores in those subjects are usually low. Any of several standardized survey tests may be used, but the New Stanford Achievement Test or the Metropolitan Achievement Tests are most frequently given in the Orthogenic School. One of the tests used for further analysis of the reading process is the Gray Standardized Oral Reading Paragraphs. On this test the examiner can measure speed of oral reading and the numbers and the kinds of errors made and can observe such aspects of reading as expression, word-grouping, and attack on new words.

Since some children can pronounce words while failing to get meaning from them, it is desirable to sample different types of understanding of reading material. The Gates Silent Reading Test is used for this purpose. This test measures four types of reading ability: appreciation of the general significance of a passage, ability to predict the outcome of given events, ability to understand precise directions, and ability to note details. These tests require the child to read as many paragraphs as possible in a uniform length of time and to answer questions on the material read. Thus, the examiner can measure speed and comprehension of silent reading of specific types and can compute the percentage of accuracy. Frequently a child guesses at answers without really understanding what he has read, and the percentage of accuracy enables the examiner to detect this habit.

The tests described indicate something of the child's general ability to read. If he does poorly in the school subjects requiring reading and does poorly in a reading test, there is evidently a reading deficiency. The nature of this deficiency, however, remains to be determined. For example, a child may be confused between right and left—a difficulty which leads him to confuse certain letters. Failure to distinguish clearly the sounds of words may cause a failure in the accurate association between sounds and letters. For testing these matters a diagnostic test is desirable. The Monroe Diagnostic Reading Examination is composed of several such tests. This examination measures knowledge of the alphabet, especially letters

which are easily confused, such as *b*, *d*, *p*, and *q*. It gives the child an opportunity to exhibit mirror-reading and mirror-writing. Hearing of sounds and ability to blend sounds into a whole word are tested as a part of this analysis. The Monroe test includes the Iota Word Test and the Word Discrimination Test, which give additional information of a diagnostic nature. One valuable feature of this test is the analysis of errors, which permits the examiner to record the number and the types of errors made. This analysis indicates the point of attack for remedial work. For instance, an excessive number of vowel and consonant errors, as compared with the standards, indicates the need of some phonic training. The Monroe examination also attempts to bring together the results of many tests, and a reading average is obtained on the basis of reading tests of five types. The reading index computed on the basis of the reading average is comparable regardless of age and grade placement, and gain in reading index accompanies improvement in reading ability.

If the child has not progressed far enough to be able to read and is therefore unable to take any of the reading tests, a reading-readiness test is administered. Such a test is designed to measure language development, motor control, visual ability, and other factors which will need special development to assure learning in the field of reading.

The inability to read fluently is often reflected in certain habits which can be noted by watching the child as he reads. Some of these habits are: moving the lips when reading silently, tilting the head in an unusual fashion, losing the place on the page, pointing with the index finger, and skipping pages.

CAUSES OF READING DIFFICULTIES

Intellectual retardation.—As has already been implied, deficiency in reading may be a somewhat specialized defect. On the other hand, the ability to read varies with the child's general intellectual ability. It is important, therefore, to know whether a child's reading deficiency is due to the general level of his intelligence or to some special cause. A child with specialized defects will respond more quickly to treatment than a child with low general intelligence. A general in-

telligence test is therefore administered to facilitate the interpretation and the prognosis of each case.

Group intelligence tests are not entirely satisfactory for this purpose because understanding the directions and performing the required tasks depend on the ability to read. Since the children who have special reading handicaps are unable to answer the questions, they receive low scores and are considered unintelligent and consequently uneducable. In view of the ambiguity in the interpretation of these tests, only individual tests should be employed.

The Stanford Revision of the Binet-Simon Intelligence Scale is given to each child studied. Reading requirements are minimum for this test. If a child manifests serious difficulty with reading, the test may be rescored by the Durrell[1] method, which removes tests that would penalize the child for inability to read. A comparison of the two scores will give the examiner an opportunity to interpret the intellectual handicap caused by inability to read satisfactorily. The Stanford-Binet test also measures vocabulary development, auditory span, association of words, orientation, and ability to reproduce visual patterns.

Since the Stanford-Binet test requires a great deal of verbal ability, it is usually supplemented by a nonverbal, or performance, test. The Arthur Performance Scale is composed of eight tests, each measuring a different manifestation of performance ability. In addition to the score on the composite test, the examiner is able to observe such traits as form perception, speed and accuracy of movements, co-ordination, judgment, persistence, and ability to follow directions.

The value of individual intelligence tests in the evaluation of reading difficulties is shown by the two following cases.

An eleven-year-old boy was referred to the school for study and possible treatment. He had failed to adjust in three schools and had been referred to a clinic. The mother reported that in the clinic he had been diagnosed as mentally deficient and had subsequently been placed in a special class in a public school. As he seemed to the mother to be the most intelligent child in the class, she wished further

[1] Harriet Monroe, *Children Who Cannot Read*, p. 69. Chicago: University of Chicago Press, 1932.

study of the case. With a chronological age of eleven years and eight months, the boy measured ten years and no months on the Stanford-Binet test and ten years and eight months on performance tests, but he had only second-grade reading ability. The diagnosis was dull-normal intelligence with a special deficiency in reading. Treatment over a period of nine months resulted in reading improvement until the ability to read became equal to the Stanford-Binet mental level. This result verified the conclusions reached when the boy was first examined.

Another boy, twelve years of age, was brought by the parents with the explanation that he had consistently failed in school and had not yet learned to read. They had been told by teachers that he was unintelligent and that he was probably the kind of child who would have to be put into an institution. Actually, with a chronological age of twelve years and seven months, his mental age on the Stanford-Binet test was ten years and ten months and his intelligence quotient 86. This case was diagnosed as dull normal with a severe reading handicap. A period of treatment verified the diagnosis in this case also.

Physical and emotional factors.—The literature concerning causes of failure in reading contains many theories regarding the importance of visual and auditory difficulties, preferred side of the body, emotional maladjustment, and physical condition of the child. An attempt is made to measure as many of these factors as possible and to discover their association with specific types of reading difficulty.

Visual factors.—The structural and functional condition of the eyes has recently received much attention in the study of difficulty in learning to read. Poor visual acuity is believed to be at least a contributing cause to difficulties in reading. An attempt is made to determine some of the functional problems of seeing which may be associated with reading failure.

Whether the child already reads or has not yet learned to read, it is important to discover any visual defects which might interfere with his reading. The Orthogenic School does not, of course, attempt to make a medical examination. It does, however, employ a number of tests which may reveal conditions requiring an examination by an ophthalmologist. When such conditions are found, the

child is referred for complete examination to a medical officer affiliated with the school. If glasses are prescribed, they are obtained; if exercises are needed, they are given. The tests used by the Orthogenic School are designed to detect major defects in the functioning of each eye individually or of the two eyes together. These defects may appear in the ability to recognize the distance of objects, the ability to move the two eyes in unison, the ability to fuse the images of the two eyes, or the ability to focus clearly with one or the other eye.

While the child is reading silently, photographic records are made of the movements of the eyes. The eye-movements frequently reflect defective or immature habits of reading. For instance, the eyes of a child in the primary grades fixate more frequently and for longer periods than those of an average adult. It is possible to count the number of fixations per line and to compute the average number of fixations for each hundred words. The examiner can also count the number of regressive movements and observe the accuracy of the return sweep of the eyes from the end of one line to the beginning of the next. The number of words read per minute can be calculated, and, by asking questions about the material, the examiner can also check the comprehension.

The eye-movement photographs frequently contain diagnostic information regarding the cause of unsatisfactory reading speed. For example, the tests given one child indicated that his comprehension was average for his age but that his reading rate was slow, although he had mastered the fundamental habits necessary for reading. The photographic film showed that, when his eyes returned from the end of one line to the beginning of the next, they were unable to focus properly and he had to look at the first word and the second, then return to these several times. About a fourth of his time was lost at the beginning of each line, but, after he started across the page, the fixations were uniform and regular. When this boy had learned to focus his eyes quickly on the first word of the line, the speed of reading became satisfactory.

Some children read with only one eye most of the time and suppress the other. The film has been found to be helpful in detecting this difficulty. One boy was turning his head so that the left

eye would not be on the page. The film indicated partial suppression, but it was not complete enough to eliminate frequent diplopia which interfered with his reading. Training to bring about the ability to focus on the same point with both eyes ended the tilt of the head and probably contributed to rhythmic movements of the eyes and progress in reading.

Occasionally a child can read well with one eye, not so well with the other, and has even more difficulty in using both eyes simultaneously. In the investigation of the functioning of the eyes in this respect, the Gray Standardized Oral Reading Check Tests are given. There are five of these tests, each composed of three paragraphs. Since the amount and the difficulty of material are standard, the scores are comparable. The child reads the first form with the preferred eye, the second with the non-preferred, the third with both eyes, the fourth with the non-preferred eye, and the last test with the preferred eye. The speed of reading and the number and types of errors are recorded for each eye and for the two eyes reading simultaneously. If the two eyes are not reading better than each separately, the ophthalmologist is consulted, and appropriate treatment is given. The following case illustrates this type of difficulty. The tests indicated that the boy's left eye read with accuracy of 83 per cent, the right eye 65 per cent, and both eyes 75 per cent. The left eye also read a little more quickly. Glasses were fitted to bring the visual acuity of the right eye up to normal, and training was given to the right eye alone in reading. Finally, binocular vision was developed through the use of prisms and devices for increasing rhythmic eye-movements.

When a child fixates the eyes many times on each line of print, there may be several causes. The reading material may be unfamiliar, or the child may be unable to see more than a few letters at one glance. As a test of this ability, a group of simple words has been so arranged that the first word presented has two letters, the second three letters, and so on until the largest number of letters exposed at one time is fifteen. The tachistoscope is used for the exposure since it permits the child to see a word for only a fraction of a second. Two or three exposures are made, and each eye is tested separately. If a child is unable to see the two letters at one time, it is frequently de-

sirable to direct training toward improving this function. Pictures or familiar words may be shown slowly but rhythmically, the speed of exposure being gradually increased until the child is capable of making quick responses to visual stimuli. The need for this training is illustrated by the case of a boy who was unable to recognize a two-letter word after three exposures. He was given training in recognizing pictures with the names printed below them and in quickly associating the names with the pictures. The speed of presentation and the number of letters in the names were increased until he was able to see four or five letters at one time and to reproduce them.

Auditory factors.—Some children are unable to hear sounds correctly or to discriminate between similar sounds, with the result that they form incorrect associations between the printed symbols and the sounds. Since the tests for this purpose are not considered adequate, some have been especially devised. One of these is composed of a list of paired words in which there is only a slight difference, at the beginning, in the middle, or at the end of the words, such as *witch* and *which*, *hide* and *hid*, *leak* and *leave*. A group of these words may be used for each ear separately and another for both ears together. It appears that inability to discriminate between sounds may be caused by lack of attention to the sounds, since training usually results in an increase of auditory discrimination. A case of this kind was that of a boy eleven years of age who had always had some difficulty with reading. On a list of twenty-five paired words his discriminative accuracy was only 31 per cent. A four-week period of training of fifteen minutes daily resulted in the ability to discover fine similarities and dissimilarities in words when they were presented to him orally.

Speech defects.—A speech defect is often present in children who have difficulty with auditory discrimination. Even when they are able to hear the sounds correctly, they cannot always reproduce them. Plans are being made for tests of hearing by such devices as the audiometer and for examination of the ear, nose, and throat of each child who has a speech or an auditory difficulty.

Cerebral dominance.—One of the theories of the cause of reading difficulties is that the child fails to establish the dominant function of one or the other hemispheres of the brain. Outwardly this failure

may show itself in the lack of definite hand preference; that is, the child does not use the left or the right hand in definite preference. Many complications are involved, according to some investigators, when the hand and the eye dominance are not of the same order, for example, right-handed preference with left-eyed preference. When a child shows these discrepant preferences, he is likely, according to these investigators, to become confused in following reading material. It is the belief of some workers in this field that left-handed children tend to reverse the sequence of words or to reverse letters in reading.

Many workers in the field of reading disability, therefore, are careful to examine the hand, ear, eye, and foot preferences of each child. Unfortunately, adequate and easily administered tests have not yet been developed for these measurements. In this article only a few of the tests used will be mentioned. The sight test is one of the more easily administered devices for the examination of eye preference. The child is given a square of cardboard with a one-inch circular opening in the center. He is told to hold the card at arm's length and to look through the opening at some object. The examiner can thus easily observe the eye preference of the child. This test should be repeated in order to determine the consistent preference of the child. Many other similar methods are used, such as requiring the child to use one eye in a particular activity, for example, in aiming at a target over a pencil.

Ear preference is also measured in several ways. As an example, the child is asked to pick up a watch from the table and to put it to his ear. He is also asked to answer a question asked him through a mailing tube and to turn his head in whichever way he prefers when listening to words spoken or whispered behind him.

Hand preference is determined by asking the child to perform unimanual activities, for example, to draw a line between two other lines spaced fairly close together, to keep time by tapping a marble on the table rhythmically, to snap his fingers, to stop a top, to bounce a ball, and to shoot a marble. The speed and the quality of writing with the preferred and the non-preferred hand are observed. The child is asked with which hand he performs certain habitual activi-

ties, and a history of the development of hand preference is obtained from the parents.

Foot preference is determined in ways similar to those used in discovering hand preference. The child may be requested to sit down and draw with one foot a simple design on the floor. He may also be asked to lift a ruler, to push over blocks, or to stop a spinning object with his foot.

A chart is made of the preference on these four tests. In some instances skill of performing the tasks is also measured. Electric-tapping boards are frequently used to measure skill of the hand and may also be adapted for use with the foot. There is frequently a difference in preference and dexterity as they are measured by these crude methods. More refinement in measuring methods and adequate norms are needed. Just how the results of the measurements are to be interpreted in relation to remedial-reading methods is not fully understood.

Lack of opportunity.—Some children who are unable to read seem to have lacked opportunity. Many of them have been absent frequently during their early school years and never seem to learn the fundamental habits of reading. These children usually make rapid progress when the fundamentals are taught from the beginning. A record of attendance and a history of previous school training are needed in the evaluation of the causes of reading difficulty

Use of wrong methods.—A method of teaching which is successful with the majority of children is sometimes not successful with a particular child. The appeal may have been almost entirely to the eyes, and in this case the phonic or the kinesthetic method may result in progress. It is important, therefore, to know which methods of teaching have been applied and the results of each type of training.

Emotional and behavior difficulties.—Most authors who discuss causes of reading difficulties mention emotional and behavior difficulties as associated, if not causative, factors. It has never been determined whether the emotional and behavior problems precede or follow the development of inability to make progress in school. The child who has difficulty with reading is usually discouraged and therefore on the defensive. He may develop antisocial behavior as a means of compensating for his inability to compete in the classroom.

Treatment of the children observed in the Orthogenic School fails to indicate the relation between the emotional problem and the reading problem. Observation indicates that both improve simultaneously. Emotional problems are studied by the psychiatrist, who diagnoses all new cases and makes recommendations concerning the most effective method of treatment. An example of a case referred chiefly because of emotional difficulties is that of an eighteen-year-old boy. He was referred by another school, and the complaints were stealing, lying, truancy, failure to do his work, and lack of dependability. When examined, the boy was found to have about average intelligence, but his reading scores were average for the beginning third-grade level. It was easy to understand why the boy had not been successful in school and why, as a Sophomore in high school, he was failing. He was trying to compensate for his failure by stealing things to give to the boys or by stealing a car to win their approval. Treatment resulted in an increase in the boy's ability to read and a decrease in undesirable behavior. Later he was able to adjust educationally and socially in the high school.

Attitude of parents.—Closely associated with the behavior of the child is the attitude of the parents and their method of handling the child. A social worker gains the confidence of the parents and attempts to learn of any factors which may have influenced the child's behavior. In one interesting case a very bright boy of six years wrote his numbers and letters backward. He was left-handed, and the parents confessed that they had discussed the possibility of his reversing numbers and letters. The boy had received much attention because of his difficulty and liked it. A short period of training at the Orthogenic School resulted in correct directional approach, and the boy had no difficulty with reading.

Physical condition.—The physical condition of each child is thoroughly investigated. Some children with reading difficulty have hampering physical defects which need treatment in order that the child may do his best work. A neurological examination is also made and in some cases is of special importance. In one case, for example, a boy had had an accident resulting in several fractures of the skull. After the injury he was unable to read. Neurological examinations gave some evidence of physical disturbance to the brain. The boy

was taught to read again in the same manner that a normal child learns except that the process was much more rapid. He was able to return to high school after remedial-reading treatment had been completed.

GENERAL METHODS OF TREATMENT

Treatment.—At the Orthogenic School children with reading difficulties are treated both as resident and as clinic cases. The former are more numerous, and residence is probably more effective. Clinical treatment is more applicable to cases where the retardation is not too great to allow the child to remain in his regular grade or where only specialized work is required. Children who are tutored elsewhere are sometimes sent to the school for treatment which requires special equipment.

Children in this school are taught in groups small enough to provide individual attention for each child and to enable each child to work at his own speed. The full diagnostic record and recommendations are given to the teacher before the child enters her room. She is then able to begin treatment at the level of the child's achievement in each school subject.

If individual work is required, the child leaves the group for this work. For instance, some children receive speech treatment, while others require work with an instrument to promote fluent reading or with prisms to exercise the muscles of the eye. If a special difficulty is encountered, it is often wise to give intensive individual training to the child outside the group. In subjects other than reading, these children may be grouped and receive stimulation from class work. They are also permitted to join the University Laboratory School gymnasium class into which they best fit socially. Other outside activities, such as Y.M.C.A. and scout activities, are encouraged.

The psychiatrist interviews the child from time to time, if desirable, and helps him to solve his conflicts regarding failure. At the same time the social worker is helping the parents to understand the problems of the child and to handle him more wisely. In short, the whole program is aimed toward removing pressure from the child so that he may be free to change his attitudes toward reading and the school.

The attempt is first made to understand the child's reactions toward his difficulties and, at the same time, to discover his interests. For this purpose the teacher often takes the child alone or with a small group on a tour, to a circus, or to a suitable motion picture. An attempt is made at all times to gain the child's confidence and to build up his faith in the teacher.

Materials.—In the selection of materials the teacher keeps foremost in her mind the child's interests. When all suitable printed materials are exhausted, as often occurs, the teacher writes stories for the child and presents them to him in typewritten form. Often the teacher uses a book, translating the story into simpler language and pasting in illustrations and pictures. Sometimes inexpensive but well-illustrated books are purchased, and new stories are pasted over the printing in the book. Since children's interests vary widely, it may be necessary to make a whole set of these books for each child treated. Material for individual drill is prepared on the typewriter for use each day, and stories are written which are designed to place emphasis on certain words or on a certain type of error that the child is frequently making.

Records.—Records and charts of the child's progress are made by the child or with his help. Thus, he may see at all times that he is having a degree of success. Rewards for working quickly are sometimes given in the form of extra playtime or more outside activities. If, however, the child fails to do his work, he may be required to use his playtime to finish it. Artificial motivation is gradually reduced as the child begins to achieve success and pleasure in reading.

CONCLUSION

The diagnosis and the treatment of children who have severe reading difficulties are in the experimental stage. Each case must be carefully examined, and treatment must be planned on the basis of the findings. Data on the manifestations of reading difficulties are being collected in an effort to link specific defects with special difficulties in reading in order that the remedial attack may be more direct. More data must be available before final conclusions can be reached.

THE EFFECT OF BILINGUALISM IN THE MEASUREMENT OF INTELLIGENCE

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INTRODUCTION

It is the general belief among teachers, particularly teachers in the Southwest, that the instruction of children from homes in which foreign languages are spoken is a serious educational problem. In this part of the United States many Mexican children enter the public schools with little, if any, acquaintance with any language other than Spanish. A child entering school knowing none of the English language presents a very different problem from that presented by the child who already understands and uses the language orally. The foreign-language-speaking child must learn both the oral and the written language of the school. Since this child really thinks in his own language, he has, for a rather extended period of time, much less ability to respond to the language of the school as an instrument of instruction.

Although this general condition is well established, little progress has been made in determining the rate at which this handicap diminishes, the point at which it becomes practically negligible, and the best methods of adjusting to it. The handicap of a Mexican child who knows no English at all can be accurately determined, but it is not so easy to estimate the amount of the difficulty that remains after three, four, five, or more years in the public schools of the United States. Upon this point opinion still seems divided.

Otis apparently believes that the language handicap of these foreign-language-speaking children is serious, particularly in the elementary grades, for he writes:

> The Otis Classification Test, like all so-called verbal tests, requires familiarity with the printed English language. Pupils from homes where a foreign language is spoken cannot be considered as properly tested by this test. This simply

means that some allowance must be made for such a pupil's score being lower than otherwise on account of what is generally termed "language difficulty." How much allowance to make is not known.[1]

Koch and Simmons, while somewhat guarded in their conclusions, appear to hold to a similar view. At least they found some evidence for the suggestion that the National Intelligence Test (a verbal test for Grades III–VIII) capitalizes the foreigners' disadvantages and, hence, is none too desirable as a tool for measuring the relative intelligence of races.[2] On the other hand, Garretson's study seems to support the hypothesis that the language handicap, so far as it is shown in test results, has almost disappeared by the time the child reaches the upper grades.[3]

Antonio Rodriguez, Jr.,[4] states that thought-getting and thought-expressing are dependent on language power and that Porto Rican children are unable to think in Spanish and English with the same facility and accuracy. He further states that the results on a test given in the mother-tongue are different from the results on a test given in the second language. When the second language is used as an instrument, what is tested is a partial amount of the child's ability to use the adopted tongue.

The writer, believing, as a result of his own observation and the observations of many instructors of Spanish-speaking children in the Southwest, that foreign-language children are handicapped because they think more accurately in their native language than they do in their adopted language, made a study to determine whether these children do as well on an intelligence test administered to them in the English language as they would do on a similar test administered in their native language.

[1] Arthur S. Otis, *Otis Classification Test, Manual of Directions*, p. 3. Yonkers-on-Hudson, New York: World Book Co., 1923.

[2] Helen Lois Koch and Rietta Simmons, *A Study of the Test-Performance of American, Mexican, and Negro Children.* Psychological Monographs, Vol. XXXV, No. 5. Princeton, New Jersey: Psychological Review Co., 1926.

[3] O. K. Garretson, "A Study of Causes of Retardation among Mexican Children in a Small Public School System in Arizona," *Journal of Educational Psychology*, XIX (January, 1928), 31–40.

[4] Antonio Rodriguez, Jr., "Are Bilingual Children Able To Think in Either Language with Equal Facility and Accuracy?" *Bulletin of the Department of Elementary School Principals*, X (January, 1931), 98–101.

PROCEDURE

It was necessary to use an intelligence test in which all directions were given orally and which required no writing of words. The test selected, because it is a nonverbal test, was the Otis Group Intelligence Scale, Primary Examination. This test is suited for use in the first three school grades. Through observation and through reading other studies of a similar nature, the writer believed that the best results could be obtained by testing in these grades. The testing program was carried on in public schools in Nogales, Arizona, during the school year 1933–34.

Form B was administered, with all the directions given orally in English, by the regular classroom teachers. Form A, the directions of which had been translated into Spanish by a high-school teacher of Spanish (who is himself Spanish), was administered by this teacher to all the three groups. The accuracy of the translation was checked by an official of the Mexican government. About ten days intervened between the administering of Form A and Form B. In order that accurate results might be obtained on the whole testing program, half of the whole group was tested first with Form A; the other half of the whole group was tested first with Form B.

The total number of children tested in this study was 295, but, because of the fact that some pupils were absent on one or the other testing dates or because of other disqualifying factors, the final number of cases that could be used for the study was 236, distributed as follows: Grade I, 89; Grade II, 89; Grade III, 58. All the children selected were of Mexican parentage, one or both parents being Mexican.

After all the tests had been scored and the intelligence quotients determined as a result of giving the directions for Form A in Spanish and giving the directions for Form B in English, many calculations were made to be used in evaluating the study. First, the difference between the intelligence quotient secured from the Spanish testing (Form A) and the intelligence quotient secured from the English testing (Form B) was found for each pupil in each of the three grades and for the composite of all grades. Second, the means and the standard deviations of the intelligence quotients were found for each of the three groups and for the composite group as a result of ad-

ministering the test in English and in Spanish. Third, the means and the standard deviations of the intelligence quotients for the boys in each of the three groups and for the girls in each of the three groups and their composites were computed for the English and the Spanish testings. Fourth, inasmuch as the test was composed of eight parts, each calculated to test a specific intellectual ability, the means and the standard deviations for each of the eight parts for both the English and the Spanish testings for each grade and for the composite group were calculated. It was believed that some indication might be brought out of the particular phase of the test which caused most of the difficulty so far as the language handicap is concerned. Fifth, the coefficients of correlation between the intelligence quotients obtained in the English testing and those obtained in the Spanish testing were computed in order that a comparison might be made with the coefficient of correlation between Form A and Form B as determined by the author of the test.

RESULTS

The first item to be considered is the difference in the intelligence quotients for each child in Spanish and English in each grade. Because of its length this table is omitted, but it may be noted that the maximum difference between the intelligence quotient in Spanish and the intelligence quotient in English was 44 points in favor of the Spanish testing.

Table 1 gives the means of the differences in the intelligence quotients in the three grades. The figures for this table were obtained (1) by constructing frequency tables of the differences in intelligence quotients for each child and averaging these differences for each grade and (2) by averaging the differences for all three grades combined into one frequency table. The maximum range of the difference in intelligence quotients (44 points) would indicate that there is a substantial handicap on account of inability to understand English. Among all the 236 cases tested in both languages, there were only nine pupils for whom there was no difference between the intelligence quotients obtained on the two tests.

Comparison of the means given in Table 2 shows that in Grade I the mean intelligence quotient secured from the Spanish testing is

greater by 7.87 points than the quotient secured from the English testing; that in Grade II the difference is 7.36 points in favor of the

TABLE 1

MEAN OF DIFFERENCES IN INTELLIGENCE QUOTIENTS SECURED FROM TESTS ADMINISTERED IN SPANISH AND IN ENGLISH TO 236 SPANISH-SPEAKING PUPILS IN GRADES I–III

Grade	Mean Difference in Favor of Spanish	Range
I	13.13	0–44
II	11.77	0–33
III	15.59	0–32
All grades	13.22	0–44

TABLE 2

MEANS, STANDARD DEVIATIONS, AND PROBABLE ERRORS OF INTELLIGENCE QUOTIENTS SECURED FROM TESTS ADMINISTERED IN SPANISH AND IN ENGLISH TO 236 SPANISH-SPEAKING PUPILS IN GRADES I–III

Test	Mean Intelligence Quotient	Standard Deviation	Probable Error
Grade I:			
Spanish testing	95.65	12.75	0.91
English testing	87.78	16.80	1.20
Grade II:			
Spanish testing	95.42	15.98	1.14
English testing	88.06	15.85	1.13
Grade III:			
Spanish testing	98.10	9.45	0.84
English testing	84.30	11.15	0.99
All grades:			
Spanish testing	96.15	13.40	0.59
English testing	86.87	15.70	0.69

Spanish testing; that in Grade III the difference is 13.80 points; and that for all three grades the difference in the mean intelligence quotients is 9.28 points in favor of the Spanish testing.

Haught[1] states, as a result of a study of Mexican children, that there is a sudden drop in intelligence quotients at about ten years of age. His conclusion might be borne out by the mean shown in Table 2 for Grade III in the English testing, but it is not borne out by the Spanish testing; for the mean intelligence quotient secured from the Spanish testing increased by about the same amount as the decrease in the mean on the English testing.

The results of comparing the mean scores of the boys with the mean scores of the girls led to the conclusion that there was little difference in the performance of the boys and girls on the test. The mean intelligence quotients for the boys on both the Spanish and the English testings were approximately one point higher than those for the girls, and this amount is not worth serious consideration.

The mean scores on the separate parts of the test, given in Table 3, show that there was no substantial variation in performance on any particular part. It would appear that the difficulty is a general language handicap rather than a specific difficulty.

The correlation of .61 $\pm$ .044 obtained as a result of comparing the Spanish testing with the English testing in Grade I is very low when consideration is given to the test publisher's correlation between Form A and Form B in English (.97). The coefficient of correlation between the Spanish and the English testings increased in Grade II to .81 $\pm$ .025 but decreased in Grade III to .71 $\pm$ .044. We should expect a gradual increase in the coefficient of correlation from Grade I to Grade III. The only explanation that can be made here for the discrepancy is that the number of cases tested in Grade III was only fifty-eight compared with eighty-nine cases in each of the other two grades. Table 1 shows that the mean difference in the intelligence quotients in Grade II also decreased but increased in Grade III. The explanation in the preceding sentence for the decrease in the coefficient of correlation in Grade III seems to be reflected also in an increase in mean difference between intelligence quotients in Grade III. For all three grades the correlation between the intelligence quotients secured on the English and the Spanish testings was .72 $\pm$ .021.

[1] B. F. Haught, "The Language Difficulty of Spanish-American Children," *Journal of Applied Psychology*, XV (February, 1931), 92–95.

TABLE 3

MEAN SCORES EARNED ON EACH PART OF OTIS GROUP INTELLIGENCE SCALE ADMINISTERED IN ENGLISH AND IN SPANISH TO 236 SPANISH-SPEAKING PUPILS IN GRADES I–III

TEST AND GRADE	MEAN SCORE		STANDARD DEVIATION	
	Spanish Testing	English Testing	Spanish Testing	English Testing
Test 1 (Following Directions—Maximum score, 16):				
Grade I	7.44	4.74	2.16	2.30
Grade II	9.03	6.72	2.58	2.47
Grade III	10.66	8.26	2.23	2.44
All grades	8.83	6.35	2.58	2.77
Test 2 (Association—Maximum score, 12):				
Grade I	9.69	7.46	3.25	4.03
Grade II	11.11	9.71	2.65	3.49
Grade III	12.07	10.34	1.22	3.07
All grades	10.81	8.59	2.81	3.96
Test 3 (Picture Completion—Maximum score, 12):				
Grade I	6.58	6.01	2.36	2.69
Grade II	8.67	8.89	2.14	2.11
Grade III	9.79	9.09	1.82	1.98
All grades	8.16	8.06	2.51	2.67
Test 4 (Maze—Maximum score, 10):				
Grade I	5.05	4.08	3.47	3.74
Grade II	6.80	4.42	3.60	3.37
Grade III	8.12	6.43	2.92	3.50
All grades	6.45	4.36	2.61	2.77
Test 5 (Picture Sequence—Maximum score, 7):				
Grade I	2.74	1.80	1.85	1.60
Grade II	3.89	3.16	2.00	1.88
Grade III	5.19	3.90	1.65	1.83
All grades	3.78	2.83	2.10	1.97
Test 6 (Similarities—Maximum score, 8):				
Grade I	3.01	1.43	2.81	1.82
Grade II	4.23	2.57	2.91	2.34
Grade III	7.84	4.03	1.80	2.43
All grades	4.41	2.50	3.03	2.40

TABLE 3—*Continued*

Test and Grade	Mean Score		Standard Deviation	
	Spanish Testing	English Testing	Spanish Testing	English Testing
Test 7 (Synonym-Antonym—Maximum score, 10):				
Grade I	4.39	3.39	2.48	2.51
Grade II	5.44	4.19	2.19	2.33
Grade III	6.36	4.19	2.49	2.51
All grades	5.34	3.92	2.89	2.48
Test 8 (Common Sense—Maximum score, 10):				
Grade I	4.72	2.07	2.71	2.21
Grade II	6.87	5.24	1.88	2.08
Grade III	7.83	2.81	1.84	2.33
All grades	6.30	4.21	2.56	2.52

GENERAL SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The purpose of this study was to determine whether bilingualism has an appreciable effect on the ability of the children to think with equal accuracy and facility in either language. In other words, is an intelligence test administered in English a fair estimate of a child's intelligence quotient when that child thinks in a language other than English? Two forms of a nonverbal intelligence test, with directions for one form given in Spanish and for the other in English, were administered to the same groups.

The results of this study indicate that bilingual children work under a serious handicap, especially in their earlier years, in American schools. The mean difference in the intelligence quotients obtained as a result of testing in the child's native language and testing in English was 9.28 in favor of the Spanish translation—a finding which indicates that there is a difficulty worthy of consideration. Again, the mean of the differences between the intelligence quotients secured from the Spanish and the English testings for all grades was found to be 13.22 points, with a range of 44 points. At the very least, this difference indicates an extra obstacle in the learning process for a foreign-language-speaking child.

From a study of all the facts brought out in this problem of determining the correct intelligence quotients of foreign-language children, particularly in their earlier years in American schools, the question might properly be asked: Would it not be well to take account of this handicap if tests are given only in the English language? This matter of testing in two languages not only concerns children of Mexican parentage but probably applies in other parts of the country with equal force to children coming from homes in which any foreign languages are spoken. If an exhaustive study could be made in the Southwest, using thousands of cases for each of the lower grades, the mean of the differences in the intelligence quotients secured from Spanish and English testings would provide a corrective figure which could be added to each intelligence quotient obtained by testing a foreign-language-speaking child in the English language. A mean difference in intelligence quotients would have to be secured for each grade because this mean difference would be expected to decrease as the child progresses to a higher grade in school.

The mean of the differences between the intelligence quotients in Grade I, according to the results in Table 1, is 13.13. If this mean difference were added to the individual intelligence quotients obtained from the English testing in this grade, the resultant intelligence quotients would be too large in some cases; in others, too small. The same condition would result in Grades II and III. It is believed that the means of the differences found in this study cannot be applied as corrective figures because of the small number of cases used. Even though some formula cannot be worked out to give a proper corrective figure, it should be borne in mind that an intelligence test administered in the English language to foreign-language-speaking children is not a fair test of the intelligence of such children.

It is apparent that in the education of Spanish-speaking children there is a combination of practically all the factors which impair the value of test results. Undoubtedly the inferiority in ability to think accurately in the adopted language is not peculiar to Spanish-speaking children but is more or less common to all foreign-language-speaking children.

READING IN AN INTERMEDIATE-GRADE SCIENCE PROGRAM

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Even a superficial survey of science-teaching in the intermediate grades reveals the fact that teachers of science hold widely different views concerning the role which reading should play in an intermediate-grade science course. One extreme is represented by those teachers who make of a science course merely a series of reading exercises. In fact, in some schools in which science is taught, it is not programmed as a separate subject but is included under "Reading." The other extreme is represented by those teachers who have been led by Agassiz's famous dictum, "Take your text from the brooks, not from the booksellers,"[1] and later restatements of the same idea to consider reading a last resort in the teaching of science.

As is often the case, the middle ground between the two extremes is the safest. It is not necessary to place so much dependence on reading in a science course at the intermediate-grade level as in the courses in other content subjects at that level. No intermediate-grade unit in science should be wholly a "library" unit. The method of science is as important as are the facts of science, and every unit should provide firsthand experience with such tools of the scientist as experimentation and direct observation of materials and phenomena. However, reading does have an important role to play in the teaching of science, and every science teacher should understand exactly what that role is.

In order to be able to analyze the role of reading in an intermediate-grade science course, let us look first at the rather generally recognized major goals of such a course. Stated in their lowest terms, they are: (1) a fund of knowledge which will lead to a better understanding of the environment and will serve as a basis for the solution of problems of science as they arise; (2) a scientific attitude; (3) an

[1] Lane Cooper, *Louis Agassiz as a Teacher*, p. 66. Ithaca, New York: Comstock Publishing Co., 1917.

acquaintance with the scientific method of attacking problems and some degree of skill in scientific thinking; (4) an interest in science; and (5) an appreciation of the part which science plays in modern life.

The reading material helpful in reaching these goals may be divided into two classes: guide-test material and assimilative, or content, material. The purposes of the guide-test material are evident from the name; the purposes of the assimilative, or content, material need further consideration.

Reading material of the assimilative type is helpful in the representation of subject matter that has first been presented orally. To illustrate, an explanation of the regular recurrence of the phases of the moon, an easily observable phenomenon, is rather complicated. The teacher, let us suppose, has developed the explanation in an oral discussion with the help of charts and models. For some children the one presentation will suffice; for others repeated presentations will be necessary. Adequate reading material will re-present the explanation without subjecting the faster members of the group to the boredom inevitably attendant on repeated oral presentations.

Reading material furnishes a means by which children can check the conclusions that they have reached by class discussion. Each member of a class, let us say, has made a list of all the foods that we could have to eat if there were no green plants on the earth. The lists are compared and discussed, and the class reaches the conclusion that people could not live on the earth if there were no green plants because they would have no food except salt and water. To check this conclusion, the class is referred to reading material which contains such statements as the following: "What, then, would be left on your list? Water and a few other minerals, such as salt and lime! Of course, with nothing else to eat, we could not live. A world without plants would be a world without people!" Perhaps, as a further illustration, the class has just seen a piece of rubber dam "form a balloon" inside a bladder glass after a part of the air in the glass was exhausted. The class offers two hypotheses—one, that the rubber was pushed in; the other, that it was pulled in. The majority of the children, as is usually the case, favor the "pulled-in" explanation, but a few cling to the other view. Reading material is then provided which says in essence, "When the air is pumped from the

glass, the air above the rubber presses the rubber into the glass. The rubber is, then, *pushed* in, not pulled in."

Of course, in both cases the teacher might have done the checking orally. Checking by consulting some written authority is likely, however, to make a deeper impression, and it has the advantage of familiarizing the members of the class with the vocabulary of the unit in print. Moreover, the teacher who forms the habit of asking a class to check its conclusions by reading will not be guilty of a certain common violation of the rules of good science-teaching. Often a teacher, after the explanation of some phenomenon has been offered by one member of a group, asks, "How many agree?" If the whole class agrees, the agreement of the class is likely to be accepted as evidence that the explanation is right. Accepting the opinion of a class as evidence that a conclusion is correct results in poor training in scientific method regardless of whether the conclusion reached is right or wrong. A class must be made to understand that questions of science cannot be settled by a show of hands. Progress in science has characteristically been made by the lone scientist who did not agree with the common opinion.

It goes without saying that children should not be led to regard printed material as infallible. They should, on the other hand, realize that most of the material in science books has been written or at least checked by recognized authorities and for that reason has weight.

Through reading, children can broaden their experiences within the areas of science with which their class work is concerned. A class may work with electromagnets in the laboratory. Each child may make a magnet for himself. Electromagnets may be found at work in bells, buzzers, motors, and telegraph sets. Reading material can then describe for the class magnets at work removing bits of iron from the flour in a flour mill, lifting huge hot blocks of steel in a steel mill, helping magicians do some of their spectacular tricks, and breaking up great piles of metal junk with the help of skull crackers. Children can be given firsthand experience with air-pressure phenomena. Reading material can take them up seventy-two thousand feet, into the stratosphere, and tell them about conditions of air pressure there. It can take them, too, underground in a caisson and

show them air pressure holding back a river while a tunnel is being built. A class may examine a compass and carry on many simple experiments with it. Reading material can show how a compass acts at the North Magnetic Pole. Fossils can easily be examined by children in museums and in laboratories. Reading material can carry the children backward in time and reconstruct for them the conditions on the earth at the time when the fossil plants and animals were alive.

Reading material designed to broaden children's experiences must be the *chief* dependence in the attainment of one of the goals of science-teaching: an appreciation of the part which science is playing in the world today. From firsthand experience children can get no adequate picture of its importance.

Reading material designed to broaden children's experiences furnishes, as a basis for making generalizations and solving problems, data which cannot be provided by firsthand experience. One of the major flaws in the science-teaching of today is that children are often allowed—even urged—to generalize from insufficient data. To illustrate, a group, we will assume, is studying fishes. In the aquariums there are fishes of several kinds. Ways in which fishes are fitted for living in water are discussed. The children, from observation of the specimens at hand, are very likely to jump to the generalization that, as a means of adaptation to their environment, all fishes have fins. Clearly it is not sound science-teaching to allow the class to reach such a generalization from the observation of the necessarily limited number of fishes at hand. Pictures and reading material must be depended on to furnish the additional data needed as a basis for such a generalization. In the same way, reading material must be the chief dependence in the solution of such problems as, "Are the other planets of our solar system inhabited?"

Through stories of the work of famous scientists, reading has a distinct contribution to make toward acquainting children with the scientific method of attacking problems. Arguments have long been carried on as to whether practice in solving simple problems or the reading of accounts of how scientists have solved problems gives children the better idea of scientific method. There is no reason for depending on one approach to the exclusion of the other. Such stories

as those of Darwin's patient accumulation of evidence for nineteen years before he published his book about the origin of species, of Pasteur's careful investigations of the diseases first of silkworms and then of people, and of Maud Slye's work with generation after generation of dancing mice in her study of cancer cannot fail to contribute something to the understanding of true scientific method.

Stories of scientific achievement as well as discussions of unfounded beliefs help make clear to children what is meant by a scientific attitude. No one knows the extent to which an understanding of a scientific attitude is effective in the development of a scientific attitude. It is certainly an initial step.

Finally, reading is helpful in widening the range of children's interest in science. The field of science is so vast that it will probably never be possible to provide time enough in the intermediate grades for the handling of all the science units appropriate for children at that level. Children can, however, be encouraged to use some of their leisure time in following any lines of interest that they may have in science. The problem of the wise use of leisure time is coming to be a problem of major concern. The importance of reading materials which serve to suggest and direct the pursuit of worthwhile hobbies and leisure activities is, therefore, growing.

It is clear, then, that, in addition to the guide-test material needed for each unit covered, reading material of the following kinds should be provided if reading is to serve to the fullest extent its several purposes in the intermediate-grade science program: (1) accurate informational material for use in checking interpretations, solving problems, and arriving at generalizations; (2) stories of firsthand experiences with natural phenomena, of scientific exploration, and of the achievements of famous scientists; (3) accounts of the part science is playing in the world today—stories of modern applications of scientific principles; (4) suggestions and directions for leisure-time activities, such as the making of collections, the carrying-on of experiments, and the constructing of pieces of apparatus—activities which an intermediate-grade pupil will be able to undertake with a reasonable chance of success; (5) myths, presented as evidences of man's early striving to understand his environment, and discussions of superstitions which we should have outgrown.

Is all the needed reading material of the various types available? The answer is clearly "no." The inclusion in bibliographies accompanying outlines of science courses of books that are far too difficult in both vocabulary and sentence structure for most intermediate-grade pupils proves the point. There is a rather large amount of textbook material. Much of it is good. Within the limits of a textbook, however, there is not room for all the types of material that are needed. Moreover, space limitations make it necessary, as a rule, to crowd into a few pages even the information needed in connection with each unit. As a result, part of the intermediate-grade textbook material is dense. We need simple material which elaborates certain topics in the textbook. We need material like De Kruif's *Microbe Hunters* but written more simply. We need vivid stories of firsthand experiences with scientific phenomena—stories like John Muir's *Stickeen* and Griggs's account of his adventures in "the Valley of Ten Thousand Smokes" but again written more simply. We need attractive material that will encourage children to spend some of their leisure time on science. We need material that will show children the contrast between the superstition of the past and the science of today. We have some of all the various types of materials needed. We should have much more. The material should, moreover, be published in small blocks so that it will not look formidable to the child who is not a fluent reader. It should be written simply, but it should not be "written down." It should be attractively illustrated. Ideally, moreover, it should be inexpensive enough so that it can be made available for the use of intermediate-grade children in large quantities. Not until there is an abundance of such material can reading ever realize its full possibilities as a tool in the teaching of science at the intermediate-grade level.

LOCAL OPPORTUNITY AND KNOWLEDGE OF CURRENT EVENTS

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INTRODUCTION

In an earlier number of this journal the author reported a study[1] of the knowledge of current events based on the results of a semi-standardized multiple-choice test which had been given for two successive years (1934 and 1935) in Grades VI–XII, inclusive, in the South Portland public schools. The emphasis of that article was on (1) the relative standing of boys and girls and (2) the influence of the methods of presenting current events in the classroom.

The present study is based on the results of a similar test given in 1936 to nearly five thousand pupils in seven more or less widely separated school systems of varying sizes. Though this study will again consider briefly the relative standing of boys and girls in the tests, the aim here is to emphasize the relation of types of school and community opportunities to current-events knowledge. Are certain conditions especially favorable, and are certain other conditions especially unfavorable, for acquiring such knowledge?

If the assumption be granted that good citizenship implies an intelligent knowledge of what is going on in the world, it is a matter of serious concern should this study show that a considerable portion of our future citizens are deprived of such knowledge.

COMMUNITY BACKGROUNDS

The 1936 test was given, as stated, in schools located in seven communities. It is necessary to know something of these communities in order to understand the significance of the comparative test results. The cities and towns concerned are listed below in order of

[1] L. C. Day, "Boys and Girls and Current Events," *Elementary School Journal*, XXXVI (January, 1936), 354–61.

size. Item 1 in each instance describes the community, while Item 2 indicates the school group taking the test and the number of pupils in the group.

A. 1. A borough of New York City: a large metropolitan area with a varied commercial and industrial background and many cultural opportunities.
   2. All pupils in Grades VI, VII, and VIII of one public school: 700 pupils.
B. 1. Midwestern city near Chicago: population 46,000; industrial background.
   2. All pupils in Grades VI–XII, inclusive: 1,609 pupils.
C. 1. Small New England city (South Portland): population 14,000; largely residential but to some extent commercial.
   2. All pupils in Grades VI–XII, inclusive: 1,851 pupils.
D. 1. New England town: population 3,600; both industrial and agricultural interests. Also an adjoining purely rural town in same school union: population 850.
   2. All pupils in Grades VI, VII, and VIII in both towns and also Grades IX–XII, inclusive, in the larger town: 371 pupils. The larger town maintains two high schools in two separate villages; one of these schools enrols only 50 pupils.
E. 1. New England town: population 3,200; chiefly industrial.
   2. All pupils in Grades X, XI, and XII: 136 pupils. A single high school, serving not only the town itself but also one nearby rural community.
F. 1. Small New England town: population 1,300. Two adjoining smaller towns, together having a population of 1,025; almost wholly agricultural.
   2. All pupils in Grades VI–XII, inclusive: 233 pupils. These were in several rural schools of the traditional type.
G. 1. Small Midwestern township: population 800; partly agricultural, partly industrial.
   2. All pupils in Grades VI, VII, and VIII: 34 pupils. A consolidated village school.

It may be stated in summary that these communities range in size and type from metropolitan New York down to a small village of eight hundred inhabitants and that they are located in four states. The number of pupils tested in the schools range from 34 to 1,851, but the number was not necessarily in proportion to the size of the town or city concerned; the selection of schools and grades was determined simply by the location of, and facilities available to, the several superintendents and principals who volunteered to administer the tests. A total of 4,934 pupils took the tests; of these, 2,459 were boys and 2,475 were girls.

STANDINGS OF BOYS AND GIRLS

The boys led the girls in all seven school systems, as in the tests at South Portland reported in the earlier article. Of thirty-seven grade groups tested, the boys had a higher score in thirty-one and the girls in five, while in one group, Grade VI in Community D, only girls were enrolled. The general school standing of the boys was most imperiled in Community G, where the girls excelled in two of the three grades tested, but the boys were sufficiently high in the other

TABLE 1

COMPARISON OF MEANS OF MEDIAN GRADE SCORES OF BOYS AND GIRLS ON TEST OF CURRENT EVENTS

GRADE	NUMBER OF MEDIANS	MEAN OF MEDIAN GRADE SCORES*		
		Boys	Girls	Excess of Boys
VI	6	28.0	25.3	2.7
VII	6	30.8	26.1	4.7
VIII	6	31.0	30.3	0.7
IX	4	32.9	30.7	2.2
X	5	35.4	31.6	3.8
XI	5	35.6	33.2	2.4
XII	5	39.9	34.8	5.1
Mean	.....	.....	.....	3.1

* The highest possible score is 50.

grade to maintain a favorable average for the boys in the school system.

A condensed comparative summary of the entire group of boys and girls for all seven participating systems is presented in Table 1. This table was obtained by tabulating the grade medians for all groups tested and then finding the means of the several medians. The table shows that boys may be expected to have a somewhat superior knowledge of current events at every grade level. The excess of the boys' over the girls' scores ranges from 0.7 in Grade VIII to 5.1 in Grade XII, with a mean excess for all grades of 3.1. This mean excess may be compared with a three-year mean excess of 3.5 obtained at South Portland.

GRADE MEDIANS

A complete summary of the test results in the seven school systems where the tests were given is presented in Table 2. The table is arranged in accordance with the initial descriptive list, in which the largest city (A) is placed first and the smallest town (G) last. It becomes obvious, as one compares the grade medians that, in general, the larger the community in which a school is located, the better is the pupils' knowledge of current events. There are occa-

TABLE 2

MEDIAN GRADE SCORES MADE BY 4,934 PUPILS IN SEVEN COMMUNITIES ON TEST OF CURRENT EVENTS

COMMUNITY	NUMBER OF PUPILS TESTED	MEDIAN SCORES IN GRADE						
		VI	VII	VIII	IX	X	XI	XII
A	700	31.5	36.5	39.0	.....	.....	.....	.....
B	1,609	29.5	31.0	38.0	36.0	39.0	39.5	42.0
C	1,851	30.0	31.0	34.0	34.0	35.0	38.0	38.5
D	371	17.0	28.0	30.0	33.0	33.0	32.0	37.0
E	136	.....	.....	.....	.....	33.0	37.0	37.0
F	233	18.0	16.0	18.0	26.0	26.0	28.0	31.0
G	34	27.0	23.0	25.0	.....	.....	.....	.....
Mean of medians	.....	25.5	27.6	30.7	32.3	33.2	34.9	37.1
Range*	.....	13.5	20.5	21.0	10.0	13.0	11.5	11.0
South Portland three-year mean	.....	27.3	30.0	33.3	34.7	36.7	39.0	41.7

* The mean range for all grades is 14.4.

sional grade exceptions to this tendency, which the writer will not attempt to explain and which in any case may be of no particular significance. In instances where a whole school group departs from this tendency, however, there are local factors which may explain the exception. These exceptions will be discussed in a later section of this article.

The differences in the amount of current-events knowledge within the same grade in different school systems are given emphasis in the ranges of the scores. The greatest ranges occur in Grades VII and VIII, while the smallest is in Grade IX. The mean range for all grades is 14.4.

A mean of the several medians in each grade is presented to serve

as a kind of standard score for the grade. A further standard is afforded by the three-year mean obtained in South Portland.

MEDIAN SCORE TOTALS OF CERTAIN GRADE GROUPS

Table 3 presents a grouping and a totaling of the median scores which brings out more clearly the tendency for current-events knowledge to vary directly with the size of the community. The group totals are determined by the distribution of the test groups in the several participating school systems. Group X consists of Grades VI, VII, and VIII, which were tested in six of the seven systems;

TABLE 3

TOTAL OF MEDIAN SCORES ON TEST OF CURRENT EVENTS FOR CERTAIN GRADE GROUPS IN SEVEN COMMUNITIES

Community Background	Group X (Grades VI, VII, VIII)	Group Y (Grade IX)	Group Z (Grades X, XI, XII)
A (Large metropolitan; commercial, industrial)	107.0	.....	.....
B (Medium-sized city; industrial)	98.5	36.0	120.5
C (Small city; residential, commercial)	95.0	34.0	111.5
D (Small town; industrial, agricultural; two high schools)	75.0	33.0	102.0
E (Small town; chiefly industrial; single high school)	.....	.....	107.0
F (Small rural; agricultural; traditional-type schools)	52.0	26.0	85.0
G (Small rural; agricultural, industrial; consolidated school)	75.0	.....	.....

Group Y is concerned with Grade IX only, tested in four systems; and Group Z consists of Grades X, XI, and XII, which were tested in five systems. The respective grade medians for each system participating in each group have been added together (except in Group Y, representing only a single grade) in order to obtain a comprehensive comparative measure of the results.

In Group X the median totals decrease exactly in accordance with community size except in the smallest place, Community G. This community appears to be not only an exception to the rule but a case in which there is a good reason for an exception. Community F is a rural community still maintaining numerous one-room schools; Community G, though a somewhat smaller place, has a single con-

solidated school. One instance may prove little, but certainly in this one instance the consolidated school is shown to have a much better current-events record than that of a comparable group of one-room schools of the traditional type.

The descent of the scores parallels community size without exception in Group Y, Community B, the medium-sized city, having a ninth-grade median of 36.0 and Community F, the purely rural community, standing at 26.0.

In Group Z, as in Group X, the scores are on a descending scale with one exception. Community E, though smaller than Community D, scores 107.0 compared with the larger community's score of 102.0. Here again, there are special local factors possibly playing a part. Community D is a community which, small as it is, maintains two separate high schools, one enrolling less than fifty pupils. Community E, on the other hand, devotes its effort and expense to a single high school, receiving also some support from tuitions paid by an adjoining town. Community F has a small six-year high school which has suffered seriously during the depression and, in addition, has certain community background handicaps which will be discussed in the following section of this article.

HANDICAPS OF THE SMALL COMMUNITY

Every teacher co-operating in this study submitted a brief report indicating the type and the amount of current-events instruction given in his room. No attempt will be made here to evaluate methods and materials, but the evidence confirms, in general, the conclusion noted in the writer's earlier study that definite, systematic instruction is more vital than the type of material used. The great virtue of current-events periodicals in schools seems to be their tendency to cause teachers to be definite and systematic in their teaching of the world's happenings.

In this study it was found that, in general, the smaller the community, the less material is used and the less time is spent on current-events instruction. Sometimes in the smaller communities material —newspaper clippings, for instance—is available but is not used, while in some cases even the simplest sort of material is not available.

A special study was made of Community F, which the tests show

to be the most handicapped with respect to current-events knowledge. The schools in this district suffered severely during the depression. Facilities, aways limited, became more meager. Several teachers made notations on their reports: "We used to have a current-events paper, but owing to the depression we had to drop it." At the time of this study only four of forty-three grade groups were enjoying the benefits of such a publication. These four groups, as well as two others using newspaper clippings systematically, were the only groups having systematic instruction. All the other groups, except four having no current events whatever, received instruction which was rather informal and incidental and which was given with little or no worth-while material at hand.

The schools of the large community cannot properly take all the credit for their superior record in current-events knowledge, nor should the schools of the small community take all the blame for their shortcomings. In Community F there are serious community lacks over which the teachers have no control. The children have only a limited opportunity to see motion pictures, and up-to-date newsreels are an even greater rarity. There are a great many homes without radios, and, what is more surprising, there are many without a daily newspaper. Some of these homes take a country weekly paper devoted chiefly to local news, while a few have no newspaper whatever.

The superintendent of schools reports a large and relatively prosperous section of one of his towns in which not a single family has a radio and not one takes a daily paper. One rural teacher writes: "Three of my five pupils [in Grades VII and VIII] have no daily paper nor radio in the home. The only knowledge of the day comes from our current-events weekly." Another writes: "There are few newspapers in the homes. The only newspaper available for me is ——— [an inexpensive weekly news magazine]. We are using a current-events weekly." Two families are represented in Grade VIII in a small rural school: one has no radio; the other, neither radio nor newspaper. One teacher depends almost wholly on her own radio for news, and she comments: "Few news clippings are available." Another writes: "Some of the children do not have either a radio or a newspaper. That makes it hard for them to enter discussions."

Truly, the most capable and conscientious teacher under such circumstances must find it a problem to get children "to enter discussions." How will these same individuals, grown up, fare in future discussions of social and economic problems? How will democracy fare if too many of us know too little of current affairs?

CONCLUSION

1. The tendency for boys to excel girls in knowledge of current events, which was noted in the author's earlier study confined to one school system, was further confirmed by this study involving seven school systems.

2. In general, it appears that the larger the community in which a school is located, the better the knowledge of current events possessed by its pupils.

3. This relation of current-events knowledge to the size of the community is further emphasized by a comparison of the median totals of certain grade groups taking the tests.

4. The lesser opportunity enjoyed by the small-town and the rural child is still further emphasized by the special study of Community F, where current-events knowledge is at the lowest point.

5. Although variations in the quality of school instruction and in materials result in varied degrees of current-events knowledge, the credit for the results, both good and bad, must be shared by the schools with the community background, which is also a potent factor in determining such knowledge. The newspapers, the radio, the newsreel, all easily available to the child of the larger community, must receive their share of credit for his superior knowledge, while the lack of these same background factors is seriously limiting the opportunities of many small-town and rural children.

6. Until social and economic conditions of smaller communities permit better background opportunities, it is clearly the duty of the schools in such places to compensate for this lack by providing more effective materials and instruction in current events.

If the country is to rely on the combined wisdom of the people for the perpetuation and the welfare of democracy, it is vital that no large group of youths be allowed to grow up lacking in the essential materials of wisdom.

Boston University
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CERTAIN LATERALITY CHARACTERISTICS OF CHILDREN WITH ARTICULATORY DISORDERS

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Certain previous studies (1, 2, 3, 4, 5), together with the writers' clinical observations, have suggested the possibility of a relation between functional articulatory disorders and confusion in the bilateral aspects of neuromuscular organization. The study reported in this article was carried out in the Psychological and Speech Clinic and the Iowa Child Welfare Research Station of the University of Iowa[1] for the purpose of investigating certain laterality characteristics of severe functional articulatory cases and comparing these with the same characteristics in normally speaking children.

SUBJECTS

Forty-one children with articulatory disorders and thirty-three without such disorders served as subjects. The speech-defective children ranged in age from six years and eight months to twelve years and ten months. Twenty-eight were boys and thirteen girls. Mental measurements were made by means of the Stanford Revision of the Binet-Simon Intelligence Scale, and the intelligence quotients ranged from 82 to 124, with a mean of 99.9. The control cases ranged in age from seven years to twelve years and eleven months. Twenty-two were boys and eleven girls. The intelligence quotients on the Stanford-Binet test ranged from 87 to 119, the mean being 102.0.

All the speech cases were taken from the regular speech classes of the public schools in Kenosha, Wisconsin, during the two school years of 1934–35 and 1935–36. These classes included approximately eight hundred children. In order that the group should be as unselected as possible, every child enrolled in the speech classes during the two years of the study who had certain articulatory defects was

[1] Fuller data and materials pertinent to this study are in the manuscript copy of this report on file in the library of the University of Iowa.

considered. From these it was desirable to eliminate any child with an intelligence quotient or an organic defect which might be causally related to the speech disorder. An intelligence quotient of 80 was set up as a minimum. Several cases were thrown out because of difficulty of hearing, paralysis, or poor general co-ordination. Observations of the writers and a statement by the school nurse were the bases for judgment of the physical condition of each child. All other children with the specified speech defects were included except two children who were dropped from the schools before tests were given and five kindergarten children who were too young to be tested successfully on the vertical writing board.

For the control group each speech-defective child was matched with a child of normal speech of the same sex, within six months of the same age and within ten points of the same intelligence quotient. These children were found at the Soldiers' Orphans' Home at Davenport, Iowa; at the State Juvenile Home at Toledo, Iowa; and at the University Elementary School at Iowa City, Iowa. Control cases with the specified requirements were not available for eight of the speech cases. These eight, however, are considered in certain phases of this study.

NATURE OF THE SPEECH DEFECTS

The great majority of articulatory defects fall into two groups: (1) difficulty with *s* and the allied sounds—"ʃ" (as in *shut*), "tʃ" (as in *chair*), and "dʒ" (as in *jump*)—and (2) difficulty with *r* and *l*. Comparatively few persons have trouble with one or more sounds from both groups. Since for this study it was desirable to consider children whose speech defects were serious, no subjects were chosen who had difficulty with sounds in only one of the two groups. Any child who had difficulty with a sound in each of these groups or with a sound in one group and with other sounds (except "*θ*" as in *thank*, which was usually dialectal) was included. No cases were included whose speech defects might be reasonably accounted for by definite organic deficiencies or deformities.

PROCEDURE

The procedure may be divided into three parts: the selecting of cases, the administering of tests, and the securing of case histories.

Selecting cases.—Regular speech classes were organized after a general and cursory survey of the eleven elementary schools in which speech work was carried on during the two years. A more detailed examination was made during the regular class periods. Each child was asked to repeat after the examiner words containing each of the consonant sounds in the initial and the final positions. The defects noted for each pupil were sounds which the child could not so repeat and in many cases represented only a part of the difficulty. In several instances children were able to form and to use sounds in simple and familiar words for which they made many substitutions or omissions in longer and less familiar words. With one exception, all the speech cases were in class for a minimum of one semester and the majority for an entire year. This period afforded ample opportunity for observation during free speech and allowed the examiner to become thoroughly familiar with the defects of each child.

Administering tests.—As a basis for eliminating cases of low intelligence and for purposes of comparison in selecting control cases, a Stanford-Binet intelligence test was administered.

Ocular dominance was determined by the use of a card 9 by 11 inches with a hole about a half-inch in diameter in the center. The subject held the card in both hands at arm's length and, with both eyes open, looked through the hole at the examiner's nose. A minimum of five trials was made.

An adaptation of the Van Riper simultaneous vertical writing test (6) was given. This test consists of three parts: the drawing of (1) kinesthetic, (2) visual, and (3) script patterns.

1. A simple pattern is formed by a groove in a board. While blindfolded, the subject learns this pattern by tracing with a stylus which he holds in both hands. When the pattern has been learned, a board is placed in a vertical position in front of him and at right angles to the body. Still blindfolded, he draws the pattern on opposite sides of the board with both hands at the same time.

2. The visual pattern is placed above the normal line of vision, and in the same manner as before the subject draws this pattern on the vertical board with both hands simultaneously. Usually a small cardboard is held between the eyes and hands to make sure that the subject is not watching his drawing.

3. For the script test the subject is asked to write the word "cat" in the same manner. Since many first-grade children are more familiar with the writing of their own given name, they are allowed to write that if they prefer. In some cases it is necessary to substitute printing for the script.

The test included four kinesthetic patterns, four visual patterns, and one script, a total of nine responses. It is assumed, on the basis of previous studies (**2, 6, 7**), that the preferred hand will produce the normal pattern and the non-preferred hand a mirrored pattern. The scores were translated into an index of laterality by using the formula $\frac{R + \frac{1}{2}A}{N}$, in which R represents the total number of patterns drawn correctly with the right hand and mirrored with the left; A represents patterns drawn correctly with both hands, mirrored with both hands, or partly correct and partly mirrored with each hand; and N is the total number of patterns drawn. A purely right-handed performance would result in an index of 1.00 and a purely left-handed performance in an index of 0.00.

Securing case histories.—Case histories were obtained by means of personal interviews with one or both of the parents and with the teacher.

RESULTS

Ocular dominance.—Of the thirty-three matched speech cases, 57.6 per cent were right-eyed, 36.4 per cent were left-eyed, and 6 per cent were amphiocular. Of the thirty-three matched control subjects, 42.4 per cent were right-eyed, 54.5 per cent were left-eyed, and 3 per cent were amphiocular. The difference between the two groups in terms of the percentages of children who were right-eyed was 1.24 times its standard error; in terms of the percentages of pupils who were left-eyed, the difference was 1.50 times its standard error. These differences fall short of definite statistical significance.

Vertical writing test.—Indices for the thirty-three matched speech cases ranged from 0.00 to 1.00, with a median of 0.55. The first quartile was 0.22, and the third quartile was 0.85. The mean index of this group was 0.53. The indices for the thirty-three matched control cases ranged from 0.11 to 1.00, with a median of 0.77. The first quartile was 0.46, and the third quartile was 1.00. For the control

cases the mean index was 0.70.[1] The difference between the median indices of the two groups was 2.36 times its standard error and was therefore indicative, at least, of a true difference.

Of the speech cases, 72.7 per cent had an index below 0.75, or within what might be indicated as the ambidextrous and left-handed range. However, only two of the paired speech cases, or 6 per cent, were known as left-handed. Of the control cases, 45.4 per cent had an index below 0.75. Two of these cases, or 6 per cent, were known as left-handed. The difference between 72.7 per cent and 45.4 per cent was 2.33 times its standard error and tended, therefore, to be indicative of a true difference.

Case analyses.—Since the majority of the control subjects were obtained in institutions and since case histories were not available, this part of the study is not comparative. It deals with forty-one speech cases.

Abnormal birth conditions were found in eight cases, or 20 per cent of the group. Ten of the cases, or 24 per cent, may be said to have had serious illnesses or injuries, the term "serious" being used in a liberal sense.

Twelve per cent of these children were late in speech development, most of them beginning to talk at about three years. Twelve per cent had been reported by the teacher as having definite reading or spelling disabilities. Seven cases, or 17 per cent, had relatives who stuttered or had stuttered. In four cases these were members of the immediate family: parents, brothers, or sisters. Sixteen cases, or 39 per cent, reported oral inaccuracies among relatives. In thirteen cases these relatives were in the immediate family.

Twenty-four cases (59 per cent) had a total of forty-five relatives who were known to be left-handed or definitely ambidextrous. Eleven of these cases had a total of sixteen members of the immediate family who were left-handed or ambidextrous. Four (10 per cent) of the cases were left-handed. In every instance there had been an attempt to make the child right-handed. Fifteen per cent of the cases were ambidextrous, using the least preferred hand in many activities.

[1] Milisen and Johnson (2) administered this test to an unselected sample of 120 children and obtained a mean index of 0.78.

Twelve cases (29 per cent) had had definite interference with handedness development either through training or injury. These include the four left-handed children mentioned above with whom efforts to shift the handedness were not successful.[1]

If it is assumed that interference with native handedness would cause some degree of confusion in lead, the two groups—the ambidextrous children and those for whom there had been some interference with handedness—contained fourteen cases (34 per cent) who had or had had confusion in motor lead.

The percentages in this analysis are probably affected by the fact that in some instances histories were not available or were meager. All cases were retained in this part of the study, however, in order that the speech-defective group might remain unselected.

Although histories were not available for the control cases, a few facts were obtained from these children concerning handedness or speech in the immediate family. It is to be understood that these would be too meager or unreliable to be used for comparison. Six of the thirty-three told of relatives in the immediate family who were left-handed. Two were themselves left-handed. Two had members of the immediate family who had stuttered.

SUMMARY AND CONCLUSION

Forty-one speech cases with severe functional articulatory defects were selected from the eight hundred children enrolled in the regular speech classes of the Kenosha, Wisconsin, schools during the two school years 1934–35 and 1935–36. Control cases, matched by sex, age, and intelligence quotient, were found for thirty-three of the speech cases.

More of the control group than of the speech group were found to be left-eyed. The difference between the groups in this respect was not statistically significant.

As measured by an adaptation of the Iowa simultaneous writing test, the control cases showed a noticeably greater degree of right-handedness. The difference between the groups on the basis of this test came near to being statistically significant.

[1] Histories of these twelve cases are included in the manuscript copy of this report on file in the library of the University of Iowa.

A fifth of all the speech-defective subjects showed a history of apparently abnormal birth conditions, and a fourth had had severe illnesses or injuries—factors which might have had an influence on speech development.

It is probable that one-third of the speech defect cases had or had had confusion in motor lead, as indicated by case histories and observational evidence.

The results of this investigation warrant the conclusion that handedness, as measured, tends to be related to severe functional articulatory defects. The findings with regard to eyedness, however, were not significant. The defective-speech cases, as a group, presented a greater proportion of right-hand reversals (indicative of left-handedness) on a simultaneous-writing test than did a group of normal speakers matched for sex, age, and intelligence quotient. It would seem that this finding can be best interpreted in terms of the concept of hemispherical dominance as presented by Travis (5). Further research on this problem is undoubtedly warranted in view of the obviously important implications of such results as are here reported.

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3. NICE, MARGARET MORSE. "Ambidexterity and Delayed Speech Development," *Pedagogical Seminary*, XXV (June, 1918), 141–62.
4. ORTON, SAMUEL T. "Word-Blindness in School Children," *Archives of Neurology and Psychiatry*, XIV (November, 1925), 581–615.
5. TRAVIS, LEE EDWARD. *Speech Pathology*. New York: D. Appleton & Co., 1931.
6. VAN RIPER, C. "A New Test of Laterality," *Journal of Experimental Psychology*, XVII (April, 1934), 305–13.
7. VAN RIPER, C. "The Quantitative Measurement of Laterality," *Journal of Experimental Psychology*, XVIII (June, 1935), 372–82.

SELECTED REFERENCES ON ELEMENTARY-SCHOOL INSTRUCTION

I. Curriculum, Methods of Teaching and Study, and Supervision

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In this bibliography are included selected publications in the field of the elementary-school curriculum, methods of teaching and study, and supervision of elementary-school instruction which appeared during the period from April 1, 1936, to March 31, 1937. Foreign-language titles are not included, nor have popular articles on the topics been cited unless they present facts not generally known or an original and challenging point of view. The materials on curriculum and methods deal with general aspects of these topics; studies dealing with specific subjects will be listed in subsequent issues.

Curriculum[1]

387. Babcock, Russell B. "A Seventh Grade Course in Sex Education," *Progressive Education*, XIII (May, 1936), 374–82.

Discusses content and procedures of a course in sex education given in the schools of Winnetka, Illinois.

388. *A Correlated Curriculum.* A Report of the Committee on Correlation of the National Council of Teachers of English. New York: D. Appleton-Century Co., Inc., 1936. Pp. xvi+326.

Does not support the abolition of subjects but rather urges unification through selectivity and the building-up of natural relationships.

389. Dawson, Mildred A. "Children's Preferences for Conversational Topics," *Elementary School Journal*, XXXVII (February, 1937), 429–37.

Presents data on conversational preferences which should be considered in organizing the language-composition curriculum.

[1] See also Items 408 (Buckingham and Dolch) and 457 (Fitzgerald) in the list of selected references appearing in the October, 1936, number of the *Elementary School Journal;* Items 182 (Andrus and Associates), 214 (Hockett and Neeley), and 216 (Miller) in the April, 1937, number of the *Elementary School Journal;* Item 22 (Judd) in the January, 1937, number of the *School Review;* and Item 99 (Marshall and Goetz) in the February, 1937, number of the *School Review.*

390. FELDMAN, ESTELLE E. "The Dull Child and the Junior High School Curriculum," *Journal of Experimental Education*, V (December, 1936), 206–11.

An experimental study of the need for providing a differentiated program for dull children at all levels of the school.

391. HEATON, KENNETH L. "State Curriculum Programs for 1936–1937," *Curriculum Journal*, VIII (February, 1937), 42–48.

An analysis of curriculum work being done by state departments of education.

392. *International Understanding through the Public-School Curriculum.* Prepared by the Society's Committee on International Understanding. Thirty-sixth Yearbook of the National Society for the Study of Education, Part II. Bloomington, Illinois: Public School Publishing Co., 1937. Pp. xii+364.

Describes methods and materials of instruction calculated to produce a better understanding of international relations.

393. KELTY, MARY G. "Recent Trends in the Social Studies for the Middle Grades," *Elementary School Journal*, XXXVII (December, 1936), 257–67.

Discusses problems incidental to four major curriculum trends: (1) the activity program, (2) fusion or integration, (3) threads of institutional developments, and (4) separate subjects.

394. KNUDSEN, CHARLES W. "What Do Educators Mean by 'Integration'?" *Harvard Educational Review*, VII (January, 1937), 15–26.

A critical résumé of points of view concerning the integration of the subjects in the curriculum.

395. *Louisiana Program of Curriculum Development.* Study Program. Bulletin No. 324. Baton Rouge, Louisiana: Louisiana State Education Department, 1936. Pp. 166.

A description of the Louisiana plan for organizing teachers for the study of the curriculum.

396. MAYHEW, KATHERINE CAMP, and EDWARDS, ANNA CAMP. *The Dewey School.* New York: D. Appleton-Century Co., Inc., 1936. Pp. xvi+490.

A historical review of the Laboratory School of the University of Chicago, 1896–1903.

397. NOYES, DOROTHY. "Finding Social Mathematics in School Activities," *Mathematics Teacher*, XXIX (November, 1936), 340–45.

A general discussion of the means used by a teacher to vitalize arithmetic instruction by using applications arising in any other subject.

398. ORATA, PEDRO T. "Conflicting Viewpoints in Contemporary American Education," *Educational Administration and Supervision*, XXII (April and May, 1936), 299–313, 361–74.

The first article, "Traditional and Scientific Education," discusses practices of curriculum-making growing out of the concept that learning is specific, which leads to the analytical approach in curriculum-making. The second article, " 'Fifty-seven Varieties' of Progressive Education," gives a summary of points of view on progressive education expressed by writers differing widely in their conceptions of the movement.

399. PARKER, J. C. "Organization of a City School System for Effective Curriculum Development," *Curriculum Journal*, VII (November, 1936), 8–15.

Contains data concerning plans used in various cities for organizing programs of curriculum development.

400. STREITZ, RUTH. "When Should Reading Experiences Begin?" *Progressive Education*, XIII (May, 1936), 325–32.

A critical review of studies dealing with the question of the point at which reading instruction should begin.

401. THORNDIKE, EDWARD L. "The Vocabulary of Books for Children in Grades 3 to 8," *Teachers College Record*, XXXVIII (December, 1936; January and February, 1937), 196–205, 316–23, 416–29.

Part I lists and discusses words outside the Thorndike list of twenty thousand which were found in four and a half million words from books recommended for pupils in Grades III–VIII. Part II is concerned with the differences in vocabulary of 120 juvenile books and the vocabulary of the 279 sources used in determining the Thorndike list of twenty thousand words. Part III deals with the frequency of occurrence of various words in books recommended for pupils in Grades III–VIII.

402. *The Unique Function of Education in American Democracy*. Washington: Educational Policies Commission of the National Education Association and the Department of Superintendence, 1937. Pp. 130.

A treatise on the history of education in the United States and a statement of the function of education in directing the processes of enlightenment and discussion by which matured decisions relative to curricular issues are arrived at.

403. WASHBURNE, CARLETON, and MORPHETT, MABEL VOGEL. "Manuscript Writing—Some Recent Investigations," *Elementary School Journal*, XXXVII (March, 1937), 517–29.

Presents results of recent investigations of manuscript writing at various grade levels.

METHODS OF TEACHING AND STUDY[1]

404. BODE, BOYD H. "Education as Growth: Some Confusions," *Progressive Education*, XIV (March, 1937), 151–57.
Points out that "basic reconstruction" of experience must meet the legitimate requirements of both "growth" and "direction."

405. BREIDENSTINE, A. G. "The Educational Achievement of Pupils in Differentiated and Undifferentiated Groups," *Journal of Experimental Education*, V (September, 1936), 91–135.
Reports equal results on an achievement test after a year for groups in Grades II–IX when grouped according to mental ability and when not so grouped. No differences in content of curriculum were involved.

406. BROWN, FRANCIS J. "An Investigation in Character Education," *Journal of Educational Research*, XXX (September, 1936), 14–19.
Reports a list of unfavorable traits developed through school experience reported by pupils and recommends steps for developing a program in character education.

407. BURNS, ZED H. "Practice, Variability, and Motivation," *Journal of Educational Research*, XXX (February, 1937), 403–20.
Summarizes an investigation dealing with motivation and its effects on learning.

408. CONNOR, WILLIAM L., and HAWKINS, GERTRUDE C. "What Materials Are Most Useful to Children in Learning To Solve Problems?" *Educational Method*, XVI (October, 1936), 21–29.
Reports that the best materials consist of "problems selected by pupils themselves from their environment to illustrate the processes they are expected to learn."

409. CORNELL, ETHEL L. *The Variability of Children of Different Ages and Its Relation to School Classification and Grouping*. Educational Research Series, 1937, No. 1. Bulletin of the University of the State of New York, No. 1101. Albany, New York: University of the State of New York, 1937.
Reports range of performance of children of ages seven, ten, and fourteen, regardless of their grade classifications, in achievement and mental age. Describes the complications for grouping.

410. GATES, ARTHUR I. "The Necessary Mental Age for Beginning Reading," *Elementary School Journal*, XXXVII (March, 1937), 497–508.
Presents data showing that teaching methods and materials are important factors in the mental level required for beginning reading.

[1] See also Item 429 (Worlton) in the list of selected references appearing in the October, 1936, number of the *Elementary School Journal;* Items 203 (Smith and Jensen) and 221 (Van Alstyne, Hattwick, and Totten) in the April, 1937, number of the *Elementary School Journal;* Item 489 in the September, 1936, number of the *School Review;* and Item 354 in the May, 1937, number of the *School Review*.

411. GATES, ARTHUR I., and BOND, GUY L. "Some Outcomes of Instruction in the Speyer Experimental School (P.S. 500)," *Teachers College Record*, XXXVIII (December, 1936), 206–17.

Describes the effectiveness of an activity program used as the basis of reading instruction for dull-normal pupils.

412. GEYER, DENTON L. "The Results of Activity Instruction," *Journal of Educational Research*, XXX (November, 1936), 188–97.

An evaluation of published researches on the results of "activity" instruction.

413. HARDY, MARTHA CRUMPTON. "Improvement in Educational Achievement Accompanying a Health Education Program," *Journal of Educational Research*, XXX (October, 1936), 110–23.

Reports a general improvement in educational achievement growing out of a corrective, developmental health program.

414. HARDY, MARTHA CRUMPTON, and HOEFER, CAROLYN H. *Healthy Growth*. Chicago: University of Chicago Press, 1936. Pp. xii+360.

Presents the results of a study of the influence of a well-organized program of health education on the growth and the development of school children.

415. HATTWICK, BERTA WEISS, and STOWELL, MARGARET. "The Relation of Parental Over-attentiveness to Children's Work Habits and Social Adjustments in Kindergarten and the First Six Grades of School," *Journal of Educational Research*, XXX (November, 1936), 169–76.

Reports data showing the importance to the pupil of a well-adjusted home as a basis of successful work in school.

416. JAYNE, C. D. "The Integrated versus the Non-integrated Use of Moving Pictures in the Classroom," *Journal of Experimental Education*, V (September, 1936), 7–16.

Reports that children learn more when the use of motion pictures is integrated with a discussion of topics than when the pictures are used incidentally.

417. JONES, VERNON. *Character and Citizenship Training in the Public School*. Chicago: University of Chicago Press, 1936. Pp. xii+404.

Reports results of an experimental study of three specific methods of character education. It is shown that the method using firsthand experience and discussion is more effective than either method used alone.

418. KELTY, MARY G. "Adjustment of the Materials of the Social Sciences to the General Mental Development of Children in the Middle Grades," *Educational Method*, XVI (December, 1936), 113–20.

Discusses organization of materials and principles of teaching adapted to wide variations in abilities of pupils.

419. KYTE, GEORGE C. "Causes of First-Grade Nonpromotion in the Light of Measured Intelligence," *Elementary School Journal*, XXXVII (February, 1937), 415–28.

Presents data showing the importance of determining why many nonpromoted children of normal intelligence fail to make normal progress.

420. ORATA, PEDRO T. "Transfer of Training and Reconstruction of Experience," *Mathematics Teacher*, XXX (March, 1937), 99–109.

Discusses the development of number as a mode of thought and as an intellectual tool through its use in social experiences rather than as an isolated subject.

421. PERTSCH, C. FREDERICK. "A Comparative Study of the Progress of Subnormal Pupils in the Grades and in Special Classes." Brooklyn, New York: C. Frederick Pertsch (Public School 29), 1936. Pp. 102.

Shows greater academic attainment in nonsegregated groups than in segregated groups. Personality ratings are also markedly higher in nonsegregated groups.

422. POSTEL, HAROLD H. "The Effect of Adapting Reading Materials to Seriously Retarded Pupils," *Elementary School Journal*, XXXVII (March, 1937), 536–40.

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423. SEARS, JESSE B. "Some Aspects of the Problem of Homogeneous Grouping," *Educational Administration and Supervision*, XXII (October, 1936), 499–511.

Discusses the issue from the point of view of conflicting outcomes and procedures of two programs of training: direct instruction in predetermined subject matter and a program of social life.

424. TATE, HARRY L. "An Evaluation of the Project Method," *Elementary School Journal*, XXXVII (October, 1936), 122–32.

Reports results of an experimental study of a project curriculum. The outcomes were not favorable to such a program.

425. TAYLOR, EARL A. *Controlled Reading*. Chicago: University of Chicago Press, 1937. Pp. xviii+368.

Describes improved techniques for appraising visual handicaps that interfere with reading progress and means of correcting such difficulties.

426. TIEGS, ERNEST W. "Breaking Down the I.Q.," *Progressive Education*, XIII (December, 1936), 603–5.

Describes a new type of intelligence test consisting of verbal and nonverbal measures and an automatic diagnostic profile of maturity in five general factors and in sixteen more specific types of activity.

SUPERVISION[1]

427. BRIGGS, THOMAS H. "Should Education Indoctrinate?" *Educational Administration and Supervision*, XXII (November, 1936), 561–93.

Sets up eight principles to guide the schools in the development of individuals for effective participation in a democratic society.

428. DALE, EDGAR. "When and How Shall We Use the Motion Picture?" *Progressive Education*, XIII (October, 1936), 437–42.

Reviews the studies that have been made of motion pictures in the schools and discusses their use "as a device for facilitating socially beneficial behavior."

429. *The Development of a Modern Program in English.* Ninth Yearbook of the Department of Supervisors and Directors of Instruction of the National Education Association. Washington: Department of Supervisors and Directors of Instruction of the National Education Association, 1936. Pp. xii+194.

Discusses means of improving instruction in English in the schools.

430. *Educational Sociology.* Review of Educational Research, Vol. VII, No. 1. Washington: American Educational Research Association of the National Education Association, 1937. Pp. 1–112.

A review of research dealing with educational sociology and its implications for curriculum-making, of research in delinquency, and of research on the relations of the schools and other community agencies.

431. FEANY, P. J. "A Survey of Instructional Practices and Equipment Used in Observed Lessons in the Social Studies in Grades Six, Seven, and Eight, in Selected Cities of the Middle West," *Journal of Educational Research*, XXX (January, 1937), 348–56.

Reports results of observed lessons in social studies showing objectives, procedures, class organization, and materials used.

432. FLORY, CHARLES D. "Cumulative Records for Research Purposes," *Journal of Educational Research*, XXX (November, 1936), 157–68.

Outlines the essentials of an integrated functional record system.

433. *The Improvement of Education.* Fifteenth Yearbook of the Department of Superintendence of the National Education Association. Washington: Department of Superintendence of the National Education Association, 1937. Pp. 328.

Presents the view that "social inadequacies may be alienated through a properly planned system of education."

[1] See also Items 6 (Judd), 17 (Whipple), 40 (Otto), and 48 (Rogers) in the list of selected references appearing in the January, 1937, number of the *Elementary School Journal;* Item 318 (Otto) in the May, 1937, number of the *Elementary School Journal;* Item 573 (Simon) in the November, 1936, number of the *School Review;* Item 47 in the January, 1937, number of the *School Review;* and Items 336 (Judd, Breslich, McCallister, and Tyler) and 353 in the May, 1937, number of the *School Review.*

434. SEGEL, DAVID. "A Critique of the Elementary-School Graduation Examination," *Elementary School Journal*, XXXVII (March, 1937), 530–35.

Recommends that learning examinations be eliminated and that stress be placed on the guidance value of a continuous systematic testing program.

435. SHANNON, J. R. "Teachers' Attitudes toward Supervision," *Educational Method*, XVI (October, 1936), 9–14.

A report of a questionnaire study of teachers' attitudes toward supervision.

436. TOSTLEBE, M. F. "Analysis of the Relative Importance of the Success Factors Common in the Training of Teachers for the One-Room Rural School," *Journal of Educational Research*, XXX (February, 1937), 397–402.

Reports evaluations given by college specialists and county superintendents to 135 "success factors" for teachers of one-room rural schools.

437. VAN ANTWERP, HARRIET. "Teachers' Evaluation of the Effectiveness of Supervisory Activities," *Educational Method*, XV (May, 1936), 441–47.

Reports a study of teachers' evaluations of supervisory visitation practices, conferences, bulletins, and meetings.

438. ZYVE, CLAIRE T. "Recording the Changing Life of the School," *Progressive Education*, XIII (December, 1936), 621–30.

A description of the kinds of records that should be kept to enable the school to conduct an efficient program suited to individual needs and to measure the effectiveness of the programs.

Educational Writings

REVIEWS AND BOOK NOTES

Methodology-of-research milestone.—By recording the thoughts that chased through ny mind and found embodiment in fragmentary phrases as I finished reading the book by Good, Barr, and Scates,[1] I shall best enable the reader to feel my reactions to it: "A notable book; the best on the methodology of research yet published; a most comprehensive conception of research; well-balanced presentation, supported by an amazingly thorough and laborious documentary study; eminently fair to contemporaries and their predecessors; exceptionally sensitive to recent developments in widely scattered areas; an excellent and much-needed treatment of the historical and the case-study methods of research; puts statistical methods and other technical procedures in second place, where they belong; a delight—and a disappointment."

Why a disappointment? Up to 1923 there were no books on the methodology of educational research except books on statistical methods and measurement. The part was attempting to be the whole. In that year I published *How To Experiment in Education* (New York: Macmillan Company). In that book measurement and statistical methods were accorded only their due emphasis in the total functioning procedure. Like most pioneer books, it was full of faults. I have been hoping that each new book which appears would enable me to shelve mine. Carter Good's excellent treatise *How To Do Research in Education* (Baltimore: Warwick & York, Inc., 1928) and Harold H. Abelson's later and even better book *The Art of Educational Research* (Yonkers-on-Hudson, New York: World Book Co., 1933) supplemented rather than replaced my faulty one. The latest book likewise disappoints. Technical procedures are a requisite portion of the total research process. To omit them is to leave the student unequipped to proceed. To stress, as the book under review does, the common sense of research is to go to the other extreme and, worse still, is to stress that portion of the research process which the student of education is most likely to be able to provide for himself. The student who wishes to master research procedure must supplement this book with others which supply the missing links.

In all fairness it should be said that the authors have devoted themselves to

[1] Carter V. Good, A. S. Barr, and Douglas E. Scates, *The Methodology of Educational Research.* New York: D. Appleton-Century Co., Inc., 1936. Pp. xxii+882. $3.75.

developing the portion of the research process which most needs elaboration at this time and that educational historians will give them greater credit for being a bit careless of current helpfulness to individual students. The authors were acutely aware of what they were doing, as witness their words of defense: "Students (and often instructors) become so concerned with the details of statistical procedures in the abstract that they lose sight of the larger background of thought and purpose into which these procedures must fit. . . . . A concentrated emphasis upon the narrower, technical aspects of certain portions of research . . . . is the province of specialized texts" (p. 602). There is, however, another and, I believe, a better way out.

The book disappoints by being "sprawly," that is, by failing to achieve a genuine functional integration of all phases of the scientific process, including an integration of these with philosophy. The authors fail to note how all the common scientific formulas feed up through a hierarchy of formulas converging on a super-formula where science and philosophy meet happily. In addition, they commit the conventional error of many scientists, who confuse the objective and the quantitative and overstress the objective and abuse the subjective, thus contributing further to the unhappy conflict between science and philosophy (pp. 13–14). Science should recognize that the objective is no more than the consensus of the subjective; that science itself is as deeply concerned with value or feeling as is philosophy; and that there are times when, even to science, the subjective is preferable to the objective.

The main thought I wish to leave with the reader, however, is that I consider this book the best yet published on the subject and that I gladly pay the authors the compliment of my envy.

WILLIAM C. MCCALL

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A systematic approach to psychology.—There was a time when the really competent textbooks in psychology could be counted on the fingers of one hand. In the last decade and a half, however, such enormous advances have been made that the student is no longer restricted to a narrow range of titles in order to gain an introduction to the study of human behavior. The outstanding feature of most modern textbooks in psychology is a kind of eclecticism which leaves the reader with much factual material but with no systematic viewpoint. Even today the really competent *systematic* treatises in psychology are few in number. It is therefore an occasion of genuine importance to note the appearance of an extensive revision of one of the conspicuous examples of a systematic introduction to psychology.[1]

The first edition of this book appeared in 1922 under the title of *Elements of Scientific Psychology*. The second edition has been amended so completely that the adoption of a new title has seemed appropriate. At the outset, the reader of

[1] Knight Dunlap, *Elements of Psychology*. St. Louis: C. V. Mosby Co., 1936. Pp. 500. $3.00.

this review should be reminded of the influence and the significance of the first edition. Professor Dunlap was one of the leading skeptics in the instinct controversy which flourished in the academic literature of the early 1920's. In the 1922 edition of his book he emphatically rejected instincts as a principle explaining human behavior, and he urged the adoption of responses or reactions as the physiological basis of conscious processes and rejected the traditional doctrine of images as unique mental entities.

In the present edition the author makes new advances in the discussion of several topics. For example, he elaborates a distinctive theory of desires and emotion. He also presents a fundamental revision of the principle of learning, the culmination of work begun in 1928. This new approach to the problem of learning is perhaps the most unique contribution which the new edition makes to the field of psychology, and it should be a matter of fundamental concern to students working in the field of education.

The following titles of the chapters with the percentage of space devoted to each chapter will give some idea of the content of the book and the relative emphasis placed on each topic: "Introduction," 7 per cent; "The Senses," 14 per cent; "The Bodily Mechanism," 6 per cent; "Types of Response," 8 per cent; "Perceptual Responses," 9 per cent; "The Perception of Space and Time," 11 per cent; "Thought and Thought Content," 8 per cent; "Feeling and Affects," 6 per cent; "Learning," 7 per cent; "Psychological Measurements," 6 per cent; "Individual Differences," 9 per cent; "Maladjustment and Readjustment," 5 per cent.

In the Preface the author so frankly and explicitly expounds his plan of writing the book and its use as an instrument of instruction that to the reader who may be pedagogically inclined a rather full quotation will be revealing:

> I have not attempted to prepare "easy steps for little feet." There is a plenitude of books which are available to those who wish a text of that sort. I have attempted to write a book which shall be worth serious study, and which should repay the labor of which the average undergraduate is capable. If it should turn out to be suitable for the student unwilling to work, or of dull understanding, I should be deeply disappointed, for such a book is necessarily a failure. I have sought for clarity and precision rather than simplicity, and have included deliberately much repetition. The absence of copious experimental material needs no apology in a book designed as an introductory text. The introduction of such material as is appropriate to a particular class is a part of the instructor's task, and this text is by no means intended to supplant the teacher or to render his task a sinecure. Much as the lecture system has been maligned, I still believe that the living word is the superior method of elementary instruction and that reading matter should furnish an adequate basis for vitalization by lectures. I deplore the assignment of large quantities of outside reading which the student too often is incapable of digesting, and which creates confusion rather than orientation. Experimental work for elementary students, especially in large groups, degenerates almost of necessity into busy work of a trivial nature, which not only wastes the student's time but also gives him either a contempt for experimental psychology or else a fallacious belief that he has an important grasp on it. Adequate demonstrational work, on the other hand, is an important supplement to lectures and reading [pp. 8–9].

In addition to the features emphasized in the preceding quotation, the reviewer would like to call attention to other salient characteristics of the book. In the first place, the author states his case with clarity and precision. For example, he devotes ten pages to a helpful glossary. He adds a section of "Notes" to many chapters, making clear-cut distinctions in terms. He expounds his concepts carefully and makes meticulous use of technical words. His explanation for the spelling of the Russian physiologist's name (contrary to common usage) as *Pavloff*, and his use of the word "memoric" instead of the word "mnemonic" are two typical examples of this quality of his exposition. In the second place, the presentation is systematic. This system is achieved by a constant stress on consistency of interpretation, the display of a rigorous scientific temper, and a persistent emphasis on responses as a basic category in psychology. In the third place, the author's approach is strictly independent. It is true that he displays the orthodox tradition of Wundt in the large amount of space given to sensation and perception and that he reflects the trend of the behaviorists in his emphasis on responses; but in both cases he makes his own exposition, borrows very lightly from other writers, makes few acknowledgments of indebtedness, and apparently delights in exposing the muddy and confused thinking of other writers.

The book, however, is not controversial. It is not, in spite of its own systematic approach and its critical temper, an exposition of contrasting viewpoints in psychology. The terms "behaviorism," "structuralism," "functionalism," and "Gestalt" never appear in the book as labels for schools or systems of psychological interpretation.

If one bears in mind that the book under review is written as an introduction to psychology, most of the criticisms which may occur to the critical reader are irrelevant. Some readers might object to the overloading of certain topics and the relative neglect of others (for example, compare sensation, perception, thought, and personality); others might object to the heavy style and the parsimonious documentation; but any fair-minded appraisal compels acknowledgment that here is a thoroughly disciplined, cautious, stimulating, and basic introduction to psychology by one of the outstanding leaders in the field. Students of education as well as members of the psychological tribe must therefore give heed to the contributions of this significant treatise.

HOWARD Y. MCCLUSKY

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Some American cultural borrowings from Germany.—A slight monograph,[1] based on a paper presented in July, 1935, at a round table on American-German relations held in connection with the Institute of Public Affairs at the University of Virginia, has come from the press. It upholds the thesis that German influ-

[1] John A. Walz, *German Influence in American Education and Culture.* Philadelphia: Carl Schurz Memorial Foundation, Inc. (225 South Fifteenth Street), 1936. Pp. 80.

ence on American education and culture during the nineteenth century has been beneficial and profound. The study presents brief accounts of the beginnings of the study of German language and literature in the United States, of the many studies of the schools of Prussia circulated in America during the period of the common-school revival, of the establishment of the kindergarten in America, of the influence of Prussia on the university and school system of Michigan, of German influence on American universities, of the German element in New England transcendentalism, and of the St. Louis movement in philosophy.

With respect to its scope of interest, sources examined, and method of treatment, the book is limited far more than is apparent from the title. The influences of the plain German people of America, with their German-language press, their schools, churches, and German societies, are not studied. The German element had an important part in the councils of the Republican Party just at the time when Republican congresses were enacting the legislation under which the land-grant colleges and the United States Bureau of Education were set up. These matters, however, are outside the book's interest. Nor does the book treat of the influence of Herbart or Wilhelm Wundt on American school practice. Neither is there mention of the possible influence of Karl Marx on American political theory and practice.

To indicate the extent and the value of the German contribution to American education and culture, Walz cites statements from nineteenth-century lectures and popular writings. He has attempted no survey of studies in the field of the history of education in the United States, nor does he make any great use of the studies of the settlements and activities of Germans in the United States. Critical studies in both these fields hold much that is of interest to the student of the extraordinarily interesting and important topic of German influence on American education.

CHARLES F. ARROWOOD

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Principles and methods of personality adjustment.—There is no more strategic point at which the principal may make his leadership felt than in the solution of problems relating to the growth and success of the boys and girls under his tutelage.

In conference with a teacher about a child, the principal is not passing judgment on the technical preparation and the procedures employed by the teacher. Rather, he is a co-seeker with the teacher, in search of ways and means of furthering pupil success. Method, curriculum, and management—all fall into their natural perspectives as means to this fundamental end.

Principals have sensed this fact, but they have hitherto been greatly handicapped by the paucity of well-organized literature on guidance. It has been necessary to do much winnowing in several fields in order to segregate here and there materials which are capable of practical application. In the Fifteenth

Yearbook[1] the Department of Elementary School Principals has sought to meet this need.

> Generally speaking, school practice lags far behind the scientific knowledge which child-guidance specialists have accumulated in recent years. In this yearbook the Editorial Committee has attempted to combine a presentation of basic principles with practical suggestions which may be used in every elementary school. The book is not an encyclopedic or technical treatise on the psychology of behavior. It is designed for busy school people who wish to understand and guide their pupils better [p. 227].

Thus avowing its practical aims, the Editorial Committee, consisting of Samuel Berman (chairman), Bess Clement, and Maude McBroom, presents the Fifteenth Yearbook of the Department of Elementary School Principals under the title *Personality Adjustment of the Elementary-School Child.*

While thus committed to practical emphasis, the yearbook has fortunately avoided the error of dealing merely with symptoms. Emphasis is focused on the discovery and the remedial treatment of conditions underlying maladjustment.

The general outline of the yearbook is well planned. Several articles are contributed by specialists under each of the following chapter headings: "The Nature and Needs of the Child," "Out-of-School Factors Affecting Child Adjustment," "Adapting the School to Children's Needs," "The Teacher's Influence on Pupil Personality," "Types and Symptoms of Pupil Maladjustment," "Discovering and Evaluating Causes of Behavior Problems," "Applying Specific Remedial Measures," and "The Service of Specialists in Child Care and Adjustment." The book is completed with a "Summary of Selected Research Studies."

Excellent materials for study with groups of teachers and parents are afforded by many of these articles, for example, the article on "The Child-Guidance Conference for Handling Problem Cases" by Norman Fenton and Albert D. Graves, Principal F. B. Smith's contribution, "The Co-operation of Community Agencies in a Program of Child Guidance," as well as numerous others.

The issues presented are fundamental, and the prose style is conducive to easy reading. The Editorial Committee has succeeded in reducing the number of technical expressions which sometimes clutter up materials of this kind; and this fact, with the frequent use of illustrative cases, adds greatly to the utility as well as the general interest of the yearbook. The chapters are well documented and rich in selected references for persons who desire to read more extensively.

While the committee is to be commended for assembling a valuable body of materials, it must be recognized that the publication of a yearbook such as this is only a preliminary step. Still remains the old challenge to principals and school administrators generally: making knowledge effective in modifying the life of the schools. So far as the Fifteenth Yearbook is concerned, this result can

[1] *Personality Adjustment of the Elementary-School Child.* Fifteenth Yearbook of the Department of Elementary School Principals. Bulletin of the Department of Elementary School Principals, Vol. XV, No. 6. Washington: Department of Elementary School Principals of the National Education Association, 1936. Pp. 227–672. $2.00.

only be accomplished by gaining the sympathetic understanding and interest of the teaching staff and by assisting them in discovering how to apply to practical, everyday school situations the suggestions that the book offers.

The Fifteenth Yearbook, then, should be on the desk of every principal and superintendent of schools, but its presence on the executive's desk will by no means insure any modification of existing procedures. Only when the yearbook is understood and applied by teachers and counselors and by others who are responsible for promoting the day-to-day success of boys and girls can progress be made.

WORTH MCCLURE

SUPERINTENDENT OF SCHOOLS
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Methods of improving reading in the primary grades.—During recent years serious effort has been made by writers of professional books on reading to interpret to teachers in simple terms the results of scientific principles that underlie efficient teaching. This trend is admirably exemplified in a book by Clarence R. Stone.[1] As indicated by the title, the author has directed attention to the problems of teaching reading in the lower grades. By so doing, he has been able to discuss specifically and in detail a wide range of problems concerning which most teachers and school officers are urgently in need of added insight and guidance.

As indicated in the Preface, this book is planned "for teachers and supervisors in service and as a textbook in courses in reading." It presents "solutions to present-day problems in primary reading in a concrete way," by "applying the findings of research bearing upon these problems" (pp. v–vi) and by utilizing previously unpublished research studies made by the author. Stone has approached his task constructively and critically; he has attempted to face problems frankly, to see "evident pitfalls," to avoid "extreme" positions, to utilize "whatever is valid and practical from both the old and the new," and to question "anything in current theories and practices tending to produce problem cases in reading" (p. vi).

A fundamental assumption which underlies the various chapters of the book is that a real need exists "for decided improvement in reading instruction in the lower grades" (p. 1). In support of this view the first chapter presents a series of facts and conditions that are both illuminating and convincing. Stone believes that the solution lies largely in "adapting reading instruction to the varying needs of the pupils in a particular class, grade, or half-grade" (p. 2). The chief purpose of the various chapters following chapter i is to describe an adequate program of teaching in a concrete and a detailed form.

The general scope and content of the book is suggested by the following chapter titles and explanations: "A Flexible Course of Study Outlined," which pre-

[1] Clarence R. Stone, *Better Primary Reading:* How To Adapt Reading Instruction to the Varying Needs of the Children. St. Louis, Missouri: Webster Publishing Co., 1936. Pp. xvi+536.

sents major aims, standards of attainment, and materials; "A Graded Vocabulary for Primary Reading," which describes the methods used in selecting and grading the two thousand words listed in the chapter; "Fundamental Habits Essential to Better Primary Reading," which reviews the most important contributions of scientific studies relating to basic reading habits; "Need of Better Balance in Beginning Methods," which includes a detailed evaluation of typical methods of teaching reading; "The Road to a Better Start in Reading: Level I," which deals at length with problems relating to reading readiness and with the materials and methods of beginning reading; "The Road to Better Beginning Book Reading: Levels II–IV," which presents a series of guiding principles underlying group reading and describes related practical procedures and the characteristics of beginning books in reading; "Period of Rapid Progress: Levels V–VIII, Grades 2–3," which considers the problems that are usually encountered in Grades II and III; "Developing Accuracy, Fluency, and Independence in Word Recognition"; "Independent Activities, Including Seatwork Reading"; and "Prevention, Diagnosis, and Instruction of Problem Cases in Reading."

As indicated by the foregoing outline, Stone relates his major constructive suggestions to certain stages, or levels, of progress in learning to read. This procedure harmonizes with progressive trends in organizing programs of reading instruction. However, Stone defines levels of progress largely in terms of school grades and available types of reading material. This plan has certain practical advantages since most schools still retain a more or less rigid plan of classification by grades and half-grades. If instruction is to be adapted increasingly to stages of child development, it seems advisable that in the future minor emphasis be given to grade levels in organizing appropriate types of instruction and in defining the successive stages of progress through which pupils pass in learning to read.

For the type of organization suggested, the author has prepared an extremely practical discussion of reading problems. He utilizes effectively the results of scientific studies in supporting his major recommendations. The examples of good procedure are selected with unusual care and discrimination. He faces frankly and evaluates critically current practices and evidence relating to the major issues which teachers face today. The reader may find himself in disagreement with some of the recommendations and with the amount of emphasis given to certain phases of reading. The materials are so organized and presented, however, that they merit genuine respect and challenge constantly one's opinions or views concerning the issues under consideration. The book is admirably adapted not only to the needs of teachers and school officers in service but also for use in courses planned for prospective teachers of primary reading.

W. S. GRAY

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